A Generalized Budget Simulation Model for Fishing Vessels

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PREFACE

The Vessel Budget Simulator System (VBSS) enables a user to select and equip a vessel to be operated in any fishing ground normally frequented by U.S.-owned vessels. The physical flow of inputs into the production process aboard a vessel is simulated to produce the information required for financial reports. This system consists of two programs--a data management program (DMP) in COBOL that is used to create and update direct-access (D-A) physical inventory files, and a budget simulation program (BSP) in FORTRAN that performs all operational procedures. Part 1 of this manual describes the use of the DMP, while Part 2 describes the use of the BSP.

These D-A files provide the base data to create financial simulation of vessel operation. By selecting specific items from the D-A files, the user can generate whatever financial statement may be needed with the BSP.

The principle use of the simulator will be to create budgetary information needed by economic researchers, potential investors and policy-makers. The combination of data entry flexibility and options provided in the program enable the VBSS to address numerous questions on the individual vessel level. The system is limited only by the detailed nature of the data required and by the user's imagination.

Specific options are available for problem analysis. For example, considering the recent problem of cost restraint imposed by fuel price increases, the simulator has options available for the user to change the fuel price temporarily, change fishing patterns so fewer or more hours

are spent with the engine running, shift part or all of the fuel cost to the captain and crew, and calculate a break-even price of fuel. Some other policy questions that the simulator can address include the impacts of changing laws governing seasons and limits, cost of borrowed capital over the planning horizon, various crew share arrangements, and updating prices to obtain current cost and return information. All options available in the VBSS are discussed in detail under the specific agenda where they are implemented.

PART 1

DATA MANAGEMENT SYSTEM

INTRODUCTION

The data management program (DMP) for the Vessel Budget Simulation System is used to create and maintain a set of direct-access (D-A) files that contain basic data. Information in these D-A files will tend to become obsolete over time, and periodic reviews will be required to ensure that the data values are current. Certain values may need to be updated, new records may need to be added to the files and old records may need to be deleted. The DMP has been written to provide this flexibility and to facilitate anticipated changes in the structure and content of the D-A files.

Data Management Options

The DMP options available with the Vessel Budget Simulation System (VBSS) are:

1. Creation of the D-A files.
2. Addition of records to a D-A file.
3. Replacement of a particular record in a D-A file with an entirely new record.
4. Deletion of records from a D-A file.
5. Changes to a specified field within a particular record in a D-A file while retaining original value in all other fields in the record.
6. Current Status reports of list of the contents of a D-A file.

7. Out-of-date Status reports for records in the D-A files when it is necessary to check the validity of the information maintained

8. Multiple Combination of options 2 through 7.

Control Stream

The user has to construct a control stream (card deck) that consists of a date card, control cards and data cards to implement one or a combination of the DMP options. This control stream designates the options that are to be employed.

Date Card

A date card must be at the beginning of any control stream. The control stream can contain many control cards and data cards, but only one date card. The date card format is as follows:

		Card Column	Format
Date Card	DATE:	1-5	X(5)
	Month (Jan = 01, Feb = 02, etc.) Note: Do not leave column 8 blank. Ex. 01 not _1.	8-9	99
	Year (1980 = 80, 1981 = 81, etc.)	11-12	99

Control Cards

A control card contains the name of the D-A file to be used followed by the type of option to be performed upon it. The D-A file name is abbreviated to a six-character word, as shown in Table 1. The selected option is abbreviated to a three-character word, as shown in Table 2. Depending on the type of option desired, the control card may be followed by one or more "record-data cards." Options to create, add and replace require data cards; delete, change, current status and out-of-date status do not.

Table 1. D-A File Names for Use on Control Cards

D-A File	Control Card Abbreviation	Code Reference by BSP
Catch File	CATCHF	10
Catch Prices File	CPRICE	11
Fishing Effort File	EFFORT	12
Engines File	ENGINE	14
Equipment File	EQPMNT	15
Gears File	GEARSF	16
Hulls File	HULLSF	17
Paying Passenger	PAYPAS	18
Periodic Costs File	PCOSTS	19
Rates File	RATESF	20
Fixed and Variable Costs File	VCOSTS	21

Table 2. Options Available for Management of D-A Files

Option Type	Control Card Abbreviation
Creation of records (requires data cards)	CRE
Addition of records (requires data cards)	ADD
Replacement of records (requires data cards)	REP
Deletion of records	DEL
Changes to a field within a record	CHA
Current status report for a D-A file	LST
Out-of-date status report for a D-A file	STA

Data Cards

Tables 3A through 13A give the record-data cards format and content for the D-A files. Once all the data cards for a selected option have been specified, another control card may be specified followed by more record-data cards (if required). This sequence may be repeated as many times as needed. This comprises the control stream.

If the option being used requires record-data cards, special notice should be taken of the "record flag" in columns 1 and 2 of each record-data card. If there is only one data card per D-A file record, the record-data cards following each control card should be set up as follows:

Record	Card	Columns
		1 2 3 ... 80
1	1	*b .....
2	2	** .....
3	3	** .....
⋮	⋮	⋮

If there are two data cards per D-A file, the record-data cards following each control card should be set up as follows:

Record	Card	Columns
		1 2 3 ... 80
1	1	*b .....
	2	.....
2	3	** .....
	4	.....
3	5	** .....
	6	.....
⋮	⋮	⋮

Thus, the first record-data card after the control card has an asterisk only in column 1, and each succeeding record has an asterisk in columns 1 and 2.

Control Stream Construction

The following instructions guide the user in constructing the control stream for each option.

Option 1 - Creation of a D-A File

Card	Control Fields	Card Columns	Format
Control Card	VBS	1-3	XXX
	File name (refers to Table 1 for the appropriate file)	5-10	X(6)
	CRE	12-14	XXX
Data Card(s)	Refer to Tables 3A-13A for the data format found on these cards. If the file contains two cards per record, both must be included.		
Data Card(s) (continued)	Records are created sequentially based on the row numbers specified on the data cards. The row numbers must uniquely determine where a record is located within a file.		

Option 2 - Addition of Record(s) to a D-A File

Card	Control Fields	Card Columns	Format
Control Card	VBS	1-3	XXX
	File name (refer to Table 1 for appropriate file).	5-10	X(6)
	ADD	12-14	XXX
Data Card(s)	Refer to Tables 3A-13A for data format found on these cards. If the file contains two cards per record, both must be included. The program will assign row numbers relative to first empty record location.		

Option 3 - Replacement of Particular Record(s) in a D-A File with Entirely New Record(s)

		Card Column	Format
Control Card	VBS	1-3	XXX
	File name (refer to Table 1 for appropriate file).	5-10	X(6)
	REP	12-14	XXX
Data Card(s)	Replacement of records enables the user to add a completely new record specified by the row number on the data card. The record existing at the specified location prior to the replacement is over-written with the new information. Refer to Tables 3A-13A for the data format found on these cards.		

Option 4 - Deletion of Record(s) from a D-A File

		Card Column	Format
Control Card	VBS	1-3	XXX
	File name (refer to Table 1 for appropriate file).	5-10	X(6)
	DEL	12-14	XXX
	Row number of first record only to be deleted (right justify).	16-19	9(4)
	THRU	21-24(CHAR)	X(4)
	Row number of last record to be delted (right justify).	26-29	9(4)

To delete a single record, card columns 21 through 29 must be left blank.

Option 5 - Changes to a Specified Field within a Particular Record in a D-A File

		Card Column	Format
Control Card	VBS	1-3	XXX
	File name (refer to Table 1 for appropriate file)	5-10	X(6)
	CHA	12-14	XXX
Data Card	Record-flag	1-2	99
	Row number to be changed	3-6	9(4)
	Field number to be changed. These field numbers for each file are given in Tables 3A through 13A.	8-9	99
	1. Changes to interger values: right justify.	11-17	9(7)
	2. Changes to decimal values: put the decimal in column 18.	11-25	9(7).99
	3. Changes to character values: left justify.	11-70	X(60)

Option 6 - Current Status Report or List of the Content of a D-A File

		Card Column	Format
Control Card	VBS	1-3	XXX
	File name (refer to Table 1 for appropriate file)	5-10	X(6)
	LST	12-14	XXX

Option 7 - Out-of date Reports for Vessels in the D-A Files When Necessary to Check Validity of Information Maintained in the Files

		Card Column	Format
Control Card	VBS	1-3	XXX
	File name (refer to Table 1 for appropriate file).	5-10	X(6)
	STA	12-14	XXX

Option 8 - Multiple Options

Multiple combinations can be run for options 2 through 7. Use the "date card" once and arrange the options in the desired order.

TABLE 3A. Data Input Format for records in the Catch File (CATCHF)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Catch description	8 - 31	X(24)
	2	Month	33 - 34	99
	4	Catch size 1	36 - 40	9(5)
	5	Catch size 2	42 - 46	9(5)
	6	Catch size 3	48 - 52	9(5)
	7	Catch size 4	54 - 58	9(5)
	8	Catch size 5	60 - 64	9(5)
	9	Catch size 6	66 - 70	9(5)
	10	Catch size 7	72 - 76	9(5)
2	11	Catch size 8	1 - 5	9(5)
	12	Catch size 9	7 - 11	9(5)
	13	Catch size 10	13 - 17	9(5)
	14	Catch size 2	19 - 23	9(5)
	15	Catch size 12	25 - 29	9(5)
	16	Catch size 13	31 - 35	9(5)
	17	Catch size 14	37 - 41	9(5)
	3	Ice coefficient	43 - 46	9.99
		Month of entry/update	48 - 49	99
		Year of entry/update	51 - 52	99
	18	Frequency of validity checks	54 - 55	99
	19	Information location code	57 - 60	9(4)

*Example data file printout is found in Table 3B.

TABLE 4A. Data Input Format for records in the Paying Passenger File (PAYPAS)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record flag	1 - 2	XX
		Row Number	3 - 6	9(4)
	1	Catch limit description	8 - 31	X(24)
	2	Month	33 - 34	99
	3	Number of fare class 1	36 - 40	9(5)
	4	Number of fare class 2	42 - 46	9(5)
	5	Number of fare class 3	48 - 52	9(5)
	6	Number of fare class 4	54 - 58	9(5)
	7	Number of fare class 5	60 - 64	9(5)
	8	Number of fare class 6	66 - 70	9(5)
	9	Number of fare class 7	72 - 76	9(5)
2	10	Number of fare class 8	1 - 5	9(5)
	11	Number of fare class 9	7 - 11	9(5)
	12	Number of fare class 10	13 - 17	9(5)
	13	Number of fare class 11	19 - 23	9(5)
	14	Number of fare class 12	25 - 29	9(5)
	15	Number of fare class 13	31 - 35	9(5)
	16	Number of fare class 14	37 - 41	9(5)
		Month of entry/update	43 - 44	99
		Year of entry/update	46 - 47	99
	17	Frequency of validity checks	49 - 50	99
	18	Information location code	52 - 55	9(4)

*Example data file printout is found in Table 4B.

TABLE 5A. Data Input for records in the Catch Price File (CPRICE)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record Flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Catch prices description	8 - 31	X(24)
	2	Month	33 - 34	99
	3	Price for size 1	36 - 40	99.99
	4	Price for size 2	42 - 46	99.99
	5	Price for size 3	48 - 52	99.99
	6	Price for size 4	54 - 58	99.99
	7	Price for size 5	60 - 64	99.99
	8	Price for size 6	66 - 70	99.99
	9	Price for size 7	72 - 76	99.99
2	10	Price for size 8	1 - 5	99.99
	11	Price for size 9	7 - 11	99.99
	12	Price for size 10	13 - 17	99.99
	13	Price for size 11	19 - 23	99.99
	14	Price for size 12	25 - 29	99.99
	15	Price for size 13	31 - 35	99.99
	16	Price for size 14	37 - 41	99.99
		Month of entry/update	43 - 44	99
		Year of entry/update	46 - 47	99
	17	Frequency of validity checks	49 - 50	99
	18	Information location code	52 - 55	9(4)

*Example data file printout is found in Table 5B.

TABLE 6A. Data Input Format for records in the Fishing Effort File (EFFORT)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Fishing effort descripting	8 - 31	X(24)
	2	Month	33 - 34	99
	3	Engine no load	36 - 38	999
	4	Engine with load	40 - 42	999
	5	Engine off	44 - 46	999
	6	Auxiliary engine	48 - 50	999
	7	Days fished	52 - 53	99
		Month of entry/update	55 - 56	99
		Year of entry/update	58 - 59	99
	8	Frequency of validity checks	61 - 62	99
	9	Information location code	64 - 67	9(4)

*Example data file printout is found in Table 6B.

TABLE 7A. Data Input Format records in the Engine File (ENGINE)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Engine description	8 - 67	X(60)
	2	Engine price	69 - 78	9(7).99
	3	Capital code	80	9
2	4	Life	1 - 2	99
	5	Salvage percent	4 - 5	99
	6	Repair cost	7 - 11	99.99
	7	Fuel load	13 - 16	99.9
	8	Fuel no load	18 - 21	99.9
	9	Oil and Lube	23 - 28	9(3).99
	10	Oil Change percent	30 - 31	99
	11	Hours run check	33 - 35	999
		Month of entry/update	37 - 38	99
		Year of entry/update	40 - 41	99
	12	Frequency of validity checks	43 - 44	99
	13	Information location code	46 - 49	9(4)

*Example data file printout is found in Table 7B.

TABLE 8A. Data Input Format records in the Equipment File (EQPMNT)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Equipment description	8 - 67	X(60)
	2	Equipment Price	69 - 78	9(7).99
	3	Capital code	80	9
2	4	Life	1 - 2	99
	5	Salvage percent	4 - 5	99
	6	Repair cost	7 - 11	99.99
		Month of entry/update	13 - 14	99
		Year of entry/update	16 - 17	99
	7	Frequency of validity checks	19 - 20	99
	8	Information location	22 - 25	9(4)

*Example data file printout is found in Table 8B.

TABLE 9A. Data Input Format for records in the Gear File (GEARSF)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Gears description	8 - 67	X(60)
	2	Gears price	69 - 78	9(7).99
	3	Capital code	80	9
2	4	Life	1 - 2	99
	5	Salvage percent	4 - 5	99
	6	Repair cost	7 - 11	99.99
		Month of entry/update	13 - 14	99
		Year of entry/update	16 - 17	99
	7	Frequency of validity checks	19 - 20	99
	8	Information location side	22 - 25	9(4)

*Example data file printout is found in Table 9B.

TABLE 10A. Data Input Format for records in the Hull File (HULLSF)

CARD	FIELD NUMBER	CONTENTS	COLUMNS	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Hulls description	8 - 67	X(60)
	2	Hull Price	69 - 78	9(7).99
	3	Capital code	80	9
2	4	Life	1 - 2	99
	5	Salvage percent	4 - 5	99
	6	Repair cost	7 - 11	99.99
	7	Haulout cost	13 - 16	9(4)
	8	Haulout labor	18 - 21	9(4)
	9	Haulout percent	23 - 24	99
		Month of entry/update	26 - 28	99
		Year of entry/update	30 - 31	99
	10	Frequency of validity checks	33 - 34	99
	11	Information location code	36 - 39	9(4)

*Example data file printout is found in Table 10B.

TABLE 11A. Data Input Format records in the Periodic Costs File (PCOSTS)

CARD	FIELD NUMBER	CONTENTS	COLUMN	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Periodic costs description	8 - 43	X(36)
	2	First incident for cost	45 - 46	99
	3	Months between cost occurrences	48 - 49	99
	4	Annual frequency (maximum)	51 - 52	99
		Month of entry/update	54 - 55	99
		Year of entry/update	57 - 58	99
	5	Frequency of validity checks	60 - 61	99
	6	Information location code	63 - 66	9(4)

*Example data file printout is found in Table 11B.

TABLE 12A. Data Input Format records to the Rates File (RATESF)

CARD	FIELD NUMBER	CONTENTS	COLUMN	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Rates description	8 - 47	X(40)
	2	Rates value	49 - 51	999
		Month of entry/update	53 - 54	99
		Year of entry/update	56 - 57	99
	3	Frequency of validity checks	59 - 60	99
	4	Information location code	62 - 65	9(4)

*Example data file printout is found in Table 12B.

TABLE 13A. Data Input Format for records in the Fixed and Variable Cost File (VCOSTS)

CARD	FIELD NUMBER	CONTENTS	COLUMN	FORMAT
1		Record flag	1 - 2	XX
		Row number	3 - 6	9(4)
	1	Variable cost description	8 - 55	X(48)
	2	Variable cost value	57 - 64	9(5).99
		Month of entry/update	66 - 67	99
		Year of entry/update	69 - 70	99
	3	Frequency of validity checks	72 - 73	99
	4	Information location code	75 - 78	9(4)

*Example data file printout is found in Table 13B.

DIRECT-ACCESS FILES

This section describes the data in each D-A file. File descriptions and format are given in Tables 3A through 13A. Computer printouts of the D-A files are in Tables 3B through 13B. Each contains a location for record flag, row number, item description and update information. Record flag was discussed previously.

File Description

Each D-A file contains a series of records. The BSP accesses a given record by referring to its explicit row number. Each record contains information related to the description of that item. Users must supply descriptions that are specific enough to be identifiable for successful operation of the budget simulation system. For instance, when entering an engine in the engine file, one should use both brand name and model number to ensure proper location of the purchase price, repair values and fuel consumption values associated with that particular engine.

The update information contains three fields. The first field indicates the month and year of the most recent data collection. The second specifies the number of months that may elapse before the data should be checked against current market prices. The third is a location code for the sources of update information. The user should keep a list of data sources, especially prices, which are then assigned a code of up to four digits. This code is used to locate the source of the data in order to

update the information. The data source is simply a list of names, addresses and telephone numbers that the user will keep in a separate notebook.

The D-A files can be divided into three primary categories: Fishing Activities, Physical Inventories and Other Related Cost Data.

Fishing Activities

Fishing information is contained in four D-A files--Catch (Table 3A), Paying Passengers (4A), Catch Price (5A) and Fishing Effort (6A). Information on a given species landed by a vessel must be entered by months for all four files, with January always the first record and December always the last. All 12 rows must be used for each activity for each file.

The Catch file (Table 3A) contains an ice coefficient (Ice Coef) and size landing data. Ice Coef is the ratio between actual pounds of ice used and pounds of fish caught. If no ice is used in a month, a zero is entered or the field is left blank. There are 14 size categories available, and size is entered as tenths of pounds per hour of fish caught. The size categories are for user convenience only and do not represent any specific size, such as 9-12 heads-on shrimp. Up to five digits may be used to indicate the catch as the whole number of tenths of pounds of catch. This number is divided by ten in the FORTRAN program. Categories not used may be left blank or zero entered.

The Paying Passenger file (Table 4A) contains information on the number of passengers or trips per month. Size categories indicate the differences between party boats, half day or full day trips. The user should be careful to enter the corresponding price for the passenger ticket or half-day charter in the same size category in the Catch Price file.

The Catch Price file (Table 5A) contains price per pound or price per paying passenger. Prices per pounds are recorded in the individual size fields, again corresponding to specific months found in the other files of this division.

The Fishing Effort file (Table 6A) contains fishing activity units which control the operation of the vessels. For these purposes, hours of engine activity were found to be the common unit across fisheries. The first unique column is No Load, referring to the total number of hours within a calendar month that the main engine(s) operated without a load, i.e., traveling to fishing grounds With Load is the total number of hours within a calendar month that the main engine(s) operated with a load, i.e., trawling. Engine Off, or Eng Off, is the number of hours that the vessel is away from port and the main engine(s) is not in operation. These three fields are combined in the BSP to the total hours per month that the vessel is at sea. Auxiliary Engine, or Aux Eng, is the number of hours per month that the auxiliary engine (if there is one) is in operation. The final unique field is Days Fished in which any calendar day or part of any day is recorded as a full day fished. Note that this need not represent a full 24 hours.

The time units recorded in the Fishing Effort file run the activity of the vessel in the BSP. Fuel consumption is calculated according to the hours of engine operation. Catch is calculated using tenths of pounds per hour and one of the hours categories, or combination of categories, stored in this file. Repairs also are calculated using the hours stored in this file. When entering data in the D-A files, the user must be acutely aware of the "hours" time frame being used for catch, repair and fuel.

Physical Inventories

Physical Inventories has been established in four separate D-A files for all items normally found aboard a fishing vessel. These include the Engine file (Table 7A), Equipment file (8A), Gears file (9A) and Hulls file (10A). All four D-A files contain common fields of Market Price, Capital Code, Life, Salvage and Repair Cost.

Market Price is the present price of an item on the open market (not necessarily its original price). Capital Code (Cap Code) is used to indicate whether or not the item in that record location is to be depreciated. Zero (0) indicates a non-depreciable item while one (1) indicate an item that is to be depreciated. Life refers to the number of years an item can be expected to be used and depreciated accordingly. Salvage percent (Salv %) is the anticipated amount which can be retrieved by the resale of the item after it has served its useful life. Repair cost (Rep CST) is the average cost of maintenance and repair of the item per hour of use. The hours of use are found in the Effort file, or a combination of those hour categories.

The Engine file (Table 7A) contains two extra fields relating to fuel consumption and three extra fields for oil and lubrication. Gallons with load (Gals Load) contains the gallons of fuel consumed by the main engines for each hour stored in the Effort file under Hours with Load. Gallons Empty (Gals Emty) simply states the gallons of fuel consumed per hour of engine operation when there is a load, i.e., trawling. In the case of an auxiliary engine, the total running time is considered to be under load and, consequently, is entered under the Gals Load field. Oil and Lube is the cost per oil change and lubrication. The Hours Check (Hrs Chk) is

the number of hours that may elapse before a recommended oil change and lubrication. The cost of an oil and lube can be calculated using the cost per occurence in combination with hours the engine is running or alternately as a percentage of fuel consumption. This percentage is entered in Oil percentage (Oil %).

The Hulls file contains three additional fields that are not common to all the physical inventory files. Haul-Out is the cost to the vessel owner of dry docking maintenance where all labor and materials are provided. This represents price per haul-out, and is not necessarily a yearly cost item. Material Only is the cost of a haul-out but does not include any labor; it is only the cost of material needed to perform related maintenance. Haul-Out percentage (H-O%) is optional and indicates the haul-out cost as a percentage of the market value of the hull. This feature allows the cost of a haul-out to vary linearly with the price of a hull.

Other Related Cost Data

Three files--Periodic Cost (Table 11A), Rates (12A) and Variable Cost (13A)--are other related cost data.

The Periodic Cost file is used to record those costs which do not occur at regular intervals, i.e., seasonal slip fees, haul-outs, etc. The numerical representation of the month in which the cost is first incurred is recorded under the field "1st Time." "Months Until" is the number of months that elapse between occurences of these costs. "Times Per Year" is the maximum number of times in which that cost can be incurred within a single year. For example, a Texas bay shrimp trawler might need to be hauled-out every year in May and November. In this case, it is represented in the Periodic Cost file as 1st Time: 5; Months Until: 6; and Times/Year: 2.

The Rates file contains various financial data used in the accounting and lay systems. These items are referenced internally by the BSP so that the row number cannot be altered from those locations given (Row Number 1-36, Table 12B). Optional rows can be entered beginning with row 37. The "Rate Value" is given in percentage values and may be altered to indicate changes in the lay system or the financial environment of the fishing industry.

The Variable Cost file also contains items internally referenced by the BSP. The first seven record locations are reserved for the internally referenced items, i.e., price of diesel, price of ice, default cost of groceries and maximum income levels for tax calculations. The default price of ice is located in row one of this file, followed by the default price of fuel and groceries in that order. The maximum income level for employee social security tax calculation is in row 4, and the maximum income level for employee unemployment is in row 5. The last reserved row contains the owners' opportunity cost for management. These items are listed under the Cost/unit field and cannot be changed from their existing record locations. Cost/unit may be updated, however, and other items, such as license fees, slip fees, trade publications, optional fuel costs and optional grocery costs, can be entered in subsequent rows. All other fields in this file have been described previously.

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-MO1-133
CURRENT STATUS OF - CATCH FILE

ROW NBR	FISHERY DESCRIPTION	ICE COEF	MO	SIZE 1	SIZE 2	SIZE 3	SIZE 4	SIZE 5	SIZE 6	SIZE 7	SIZE 8	SIZE 9	SIZE 10	SIZE 11	SIZE 12	SIZE 13	SIZE 14	UPDATE INFORMATION
1	PORT 5 VES. 21	7.00	1	51	53	61	6	4	2	2	1	0	0	0	1	1	0	7/81 12 9999
2	PORT 5 VES. 21	7.00	2	47	45	35	2	2	1	1	1	2	0	3	7	19	3	7/81 12 9999
3	PORT 5 VES. 21	7.00	3	54	61	29	3	2	3	5	6	2	0	4	1	0	0	7/81 12 9999
4	PORT 5 VES. 21	7.00	4	31	45	34	3	2	3	4	4	1	0	1	5	7	10	7/81 12 9999
5	PORT 5 VES. 21	7.00	5	33	52	49	16	4	14	6	1	0	0	3	5	5	3	7/81 12 9999
6	PORT 5 VES. 21	7.00	6	28	31	151	130	51	7	2	0	0	0	0	0	0	0	7/81 12 9999
7	PORT 5 VES. 21	7.00	7	7	46	218	161	31	1	0	0	0	0	0	0	0	0	7/81 12 9999
8	PORT 5 VES. 21	7.00	8	32	95	222	98	15	16	1	1	0	0	0	0	0	0	7/81 12 9999
9	PORT 5 VES. 21	7.00	9	78	131	149	26	10	1	2	2	0	0	0	0	0	0	7/81 12 9999
10	PORT 5 VES. 21	7.00	10	103	96	105	9	6	0	1	0	0	0	1	1	1	0	7/81 12 9999
11	PORT 5 VES. 21	7.00	11	73	62	94	11	5	10	8	12	2	1	0	0	0	0	7/81 12 9999
12	PORT 5 VES. 21	7.00	12	40	51	54	7	3	4	4	4	1	0	0	0	0	0	7/81 12 9999
13	HALF DAY CHARTER	0.00	1	10	3	0	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
14	HALF DAY CHARTER	0.00	2	10	3	2	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
15	HALF DAY CHARTER	0.00	3	10	5	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
16	HALF DAY CHARTER	0.00	4	10	5	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
17	HALF DAY CHARTER	0.00	5	20	5	0	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
18	HALF DAY CHARTER	0.00	6	15	10	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
19	HALF DAY CHARTER	0.00	7	15	10	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
20	HALF DAY CHARTER	0.00	8	15	5	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
21	HALF DAY CHARTER	0.00	9	10	5	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
22	HALF DAY CHARTER	0.00	10	10	5	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
23	HALF DAY CHARTER	0.00	11	10	5	5	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
24	HALF DAY CHARTER	0.00	12	5	3	2	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0

SUMMARY: MAXIMUM FILE SIZE = 1200
NUMBER OF RECORDS IN FILE = 24

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - PAYING PASSENGERS FILE

ROW NBR	FISHERY DESCRIPTION	MO	FARE 1	FARE 2	FARE 3	FARE 4	FARE 5	FARE 6	FARE 7	FARE 8	FARE 9	FARE 10	FARE 11	FARE 12	FARE 13	FARE 14	UPDATE INFORMATION
1	HALF DAY CHARTER	1	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
2	HALF DAY CHARTER	2	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
3	HALF DAY CHARTER	3	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
4	HALF DAY CHARTER	4	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
5	HALF DAY CHARTER	5	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
6	HALF DAY CHARTER	6	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
7	HALF DAY CHARTER	7	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
8	HALF DAY CHARTER	8	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
9	HALF DAY CHARTER	9	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
10	HALF DAY CHARTER	10	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
11	HALF DAY CHARTER	11	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0
12	HALF DAY CHARTER	12	150	155	160	0	0	0	0	0	0	0	0	0	0	0	7/81 12 0

SUMMARY: MAXIMUM FILE SIZE = 1200
NUMBER OF RECORDS IN FILE = 12

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - CATCH PRICES FILE

ROW NBR	FISHERY DESCRIPTION	MO	SIZE 1	SIZE 2	SIZE 3	SIZE 4	SIZE 5	SIZE 6	SIZE 7	SIZE 8	SIZE 9	SIZE 10	SIZE 11	SIZE 12	SIZE 13	SIZE 14	UPDATE INFORMATION
1	SHRIMP	000 1	5.00	4.73	3.58	2.50	1.28	5.00	4.73	3.58	2.50	1.28	5.00	4.73	3.58	2.50	7/81 12 9999
2	SHRIMP	2	4.62	4.35	3.21	2.00	1.70	4.62	4.35	3.21	2.00	1.70	4.62	4.35	3.21	2.00	7/81 12 9999
3	SHRIMP	3	4.67	4.50	3.35	2.40	2.06	4.67	4.50	3.35	2.40	2.06	4.67	4.50	3.35	2.40	7/81 12 9999
4	SHRIMP	4	4.25	3.80	3.22	2.46	1.79	4.25	3.80	3.22	2.46	1.79	4.25	3.80	3.22	2.46	7/81 12 9999
5	SHRIMP	5	4.30	3.90	3.22	2.30	1.67	4.30	3.90	3.22	2.30	1.67	4.30	3.90	3.22	2.30	7/81 12 9999
6	SHRIMP	6	4.55	4.20	3.43	2.20	1.34	4.55	4.20	3.43	2.20	1.34	4.55	4.20	3.43	2.20	7/81 12 9999
7	SHRIMP	7	4.40	4.20	3.36	2.29	1.84	4.40	4.20	3.36	2.29	1.84	4.40	4.20	3.36	2.29	7/81 12 9999
8	SHRIMP	8	4.88	4.00	3.27	2.50	1.84	4.88	4.00	3.27	2.50	1.84	4.88	4.00	3.27	2.50	7/81 12 9999
9	SHRIMP	9	4.30	3.75	2.85	2.45	1.69	4.30	3.75	2.85	2.45	1.69	4.30	3.75	2.85	2.45	7/81 12 9999
10	SHRIMP	10	4.10	3.65	3.05	2.55	1.55	4.10	3.65	3.05	2.55	1.55	4.10	3.65	3.05	2.55	7/81 12 9999
11	SHRIMP	11	3.82	3.45	2.70	2.30	1.46	3.82	3.45	2.70	2.30	1.46	3.82	3.45	2.70	2.30	7/81 12 9999
12	SHRIMP	12	3.80	3.40	2.60	2.10	1.46	3.80	3.40	2.60	2.10	1.46	3.80	3.40	2.60	2.10	7/81 12 9999

SUMMARY: MAXIMUM FILE SIZE = 1200
NUMBER OF RECORDS IN FILE = 12

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-MO1-133
CURRENT STATUS OF - FISHING EFFORT FILE

ROW NBR	FISHERY DESCRIPTION	MO	NO LOAD	WITH LOAD	ENG OFF	AUX ENG	DAYS FISHED	UPDATE INFORMATION
1	PORT 5 VES. 21	1	60	114	162	42	14	7/81 12 9999
2	PORT 5 VES. 21	2	59	105	148	39	13	7/81 12 9999
3	PORT 5 VES. 21	3	59	105	148	39	13	7/81 12 9999
4	PORT 5 VES. 21	4	54	100	158	39	13	7/81 12 9999
5	PORT 5 VES. 21	5	64	126	194	48	16	7/81 12 9999
6	PORT 5 VES. 21	6	104	218	326	81	27	7/81 12 9999
7	PORT 5 VES. 21	7	122	249	301	84	28	7/81 12 9999
8	PORT 5 VES. 21	8	86	166	252	63	21	7/81 12 9999
9	PORT 5 VES. 21	9	89	174	241	63	21	7/81 12 9999
10	PORT 5 VES. 21	10	94	192	290	72	24	7/81 12 9999
11	PORT 5 VES. 21	11	71	139	198	51	17	7/81 12 9999
12	PORT 5 VES. 21	12	77	152	227	57	19	7/81 12 9999
13	HALF DAY CHARTER	1	45	15	0	0	1	7/81 12 0
14	HALF DAY CHARTER	2	45	15	0	0	1	7/81 12 0
15	HALF DAY CHARTER	3	60	20	0	0	1	7/81 12 0
16	HALF DAY CHARTER	4	60	20	0	0	1	7/81 12 0
17	HALF DAY CHARTER	5	75	25	0	0	1	7/81 12 0
18	HALF DAY CHARTER	6	90	30	0	0	1	7/81 12 0
19	HALF DAY CHARTER	7	90	30	0	0	1	7/81 12 0
20	HALF DAY CHARTER	8	75	25	0	0	1	7/81 12 0
21	HALF DAY CHARTER	9	60	20	0	0	1	7/81 12 0
22	HALF DAY CHARTER	10	60	20	0	0	1	7/81 12 0
23	HALF DAY CHARTER	11	60	20	0	0	1	7/81 12 0
24	HALF DAY CHARTER	12	30	10	0	0	1	7/81 12 0

SUMMARY: MAXIMUM FILE SIZE = 1200
NUMBER OF RECORDS IN FILE = 24

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - ENGINES FILE

ROW NBR	ENGINE DESCRIPTION	MARKET PRICE	CAP CODE	LI FE	SALV %	REP CST	GALS LOAD	GALS EMTY	OIL & LUBE	OIL %	HRS CHK	UPDATE INFORMATION
1	CAT 343 DIESEL 6:1 REDUCTION	20000.00	1	15	20	0.25	20.0	20.0	20.00	0	125	7/81 12 9999
2	PETTY AUX. ENGINE	2500.00	1	15	20	0.05	0.5	0.5	3.00	0	200	7/81 12 9999

SUMMARY: MAXIMUM FILE SIZE = 100
NUMBER OF RECORDS IN FILE = 2

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - EQUIPMENT FILE

ROW NBR	EQUIPMENT DESCRIPTION	MARKET PRICE	CAP CODE	LI FE	SALV %	REP CST	UPDATE INFORMATION
1	WASH DOWN HOSE	17.00	0	4	0	0.00	7/81 12 9999
2	BRIGGS & STRATON GAS-WATER PUMP	180.00	1	10	0	0.01	7/81 12 9999
3	BLOCKS 12"	250.00	0	3	0	0.00	7/81 12 9999
4	SONAR W/RECORDER	10000.00	1	10	0	0.10	7/81 12 9999

SUMMARY: MAXIMUM FILE SIZE = 500
NUMBER OF RECORDS IN FILE = 4

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - GEARS FILE

ROW NBR	GEAR DESCRIPTION	MARKET PRICE	CAP CODE	LI FE	SALV %	REP CST	UPDATE INFORMATION	
1	MAIN CABLE 5/8" @ 72-FOOT 1200 FEET	864.00	0	1	0	0.00	7/81 12	2
2	TRY NET DOORS 15"X30"	125.00	0	1	0	0.04	7/81 12	2
3	MAIN CABLE 900' @ 68-FOOT 9/16"	612.00	0	1	0	0.00	7/81 12	2

SUMMARY: MAXIMUM FILE SIZE = 500
NUMBER OF RECORDS IN FILE = 3

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - HULLS FILE

ROW NBR	HULLS DESCRIPTION		MARKET PRICE	CAP CODE	LI FE	SALV %	REP CST	HAUL-OUT	MATERIAL ONLY	H-O %	UPDATE INFORMATION	
1	68' WOODEN GULF SHRIMP TRAWLER-12YRS OLD	BRMN	60000.00	1	13	25	1.60	2600.00	0.00	0	7/81 12	0
2	65' STEEL GULF SHRIMP TRAWLER-3YRS OLD	ARAN	275000.00	1	12	25	1.42	1500.00	0.00	0	7/81 12	0

SUMMARY: MAXIMUM FILE SIZE = 100
NUMBER OF RECORDS IN FILE = 2

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - PERIODIC COSTS FILE

ROW NBR	ITEM DESCRIPTION	1ST TIME	MONTHS UNTIL	TIMES/ YEAR	UPDATE INFORMATION	
1	STEEL HAUL-OUT	0	24	1	7/81 12	0
2	WOODEN HAUL-OUT	6	12	1	7/81 12	0

SUMMARY: MAXIMUM FILE SIZE = 25
NUMBER OF RECORDS IN FILE = 2

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-MO1-133
CURRENT STATUS OF - RATES FILE

ROW NBR	RATES DESCRIPTION	RATE VALUE	UPDATE INFORMATION		
1	CREW SHARE OF CATCH	15	7/81	12	10
2	CREW PERCENTAGE OF GROCERIES	66	7/81	12	10
3	CREW SHARE OF FUEL	0	7/81	12	10
4	CREW SHARE OF OIL AND LUBE	0	7/81	12	10
5	CREW SHARE OF REPAIRS	0	7/81	12	10
6	CREW SHARE OF REPLACEMENTS	0	7/81	12	10
7	CREW SHARE OF ICE	0	7/81	12	10
8	CAPTAINS SHARE OF CATCH	20	7/81	12	10
9	CAPTAINS SHARE OF GROCERIES	33	7/81	12	10
10	CAPTAINS SHARE OF FUEL	0	7/81	12	10
11	CAPTAINS SHARE OF OIL AND LUBE	0	7/81	12	10
12	CAPTAINS SHARE OF REPAIRS	0	7/81	12	10
13	CAPTAINS SHARE OF REPLACEMENTS	0	7/81	12	10
14	CAPTAINS SHARE OF ICE	0	7/81	12	10
15	INTEREST RATE, LONG-TERM	12	7/81	12	10
16	INTEREST RATE, MID-TERM	15	7/81	12	10
17	INTEREST RATE, SHORT-TERM	18	7/81	12	10
18	DISCOUNT RATE	5	7/81	12	10
19	INSURANCE RATE, TOTAL VESSEL	6	7/81	12	10
20	INSURANCE RATE, HULL ONLY	5	7/81	12	10
21	INSURANCE RATE, CAPITAL INVESTMENT	6	7/81	12	10
22	INSURANCE RATE, OPERATING INVESTMENT	10	7/81	12	10
23	RATE FOR WORKMANS COMPENSATION	8	7/81	12	10
24	OPPORTUNITY COST OF EQUITY	12	7/81	12	10
25	OPPORTUNITY COST OF LABOR & MGT	10	7/81	12	10
26	RISK PREMIUM	10	7/81	12	10
27	RATE FOR SOC. SEC. CREW	6	7/81	12	10
28	UNEMPLOYMENT TAX RATE	1	7/81	12	10
29	PERCENTAGE VALUATION, PROPERTY TAX	80	7/81	12	10
30	MIL RATE, PROPERTY TAX, IN MILS	12	7/81	12	10
31	OWNER/OPERATOR SOC. SEC. RATE	6	7/81	12	10
32	INV. TAX CREDIT RATE 3-5 LIFE	3	7/81	12	10
33	INV. TAX CREDIT RATE, 5-7 YR LIFE	7	7/81	12	10
34	INV. TAX CREDIT RATE, >7 YR LIFE	10	7/81	12	10
35	INV. TAX CREDIT LIMIT EXCESS RATE	60	7/81	12	10
36	STATE INCOME TAX PERCENTAGE OF FEDERAL	10	7/81	12	10

SUMMARY: MAXIMUM FILE SIZE = 200
NUMBER OF RECORDS IN FILE = 36

VESSEL BUDGET SIMULATION SYSTEM
SEA GRANT NO. 04-8-M01-133
CURRENT STATUS OF - FIXED AND VARIABLE COSTS FILE

ROW NBR	FIXED AND VARIABLE COST ITEMS DESCRIPTION		COST/ UNIT	UPDATE INFORMATION	
1	ICE PER POUND		0.02	7/81 12	0
2	DIESEL PER GALLON		0.90	7/81 12	0
3	GROCERIES PER PERSON, ONE DAY TRIP		6.00	7/81 12	0
4	MAX INCOME EMPLOYEE SOC SEC TAX		29000.00	7/81 12	0
5	MAX INCOME EMPLOYEE UNEMPLOYMENT TAX		6000.00	7/81 12	0
6	MAX INCOME EMPLOYER SOC SEC TAX		29000.00	7/81 12	0
7	OPPORTUNITY COST FOR MANAGEMENT	000	26000.00	7/81 12	0
8	INSURANCE FEES FOR CREW AND HULL		6700.00	7/81 12	0
9	GROCERIES PER PERSON, ONE DAY TRIP		6.00	7/81 12	0
10	BAR OF ICE (300 LB)		4.00	7/81 12	0
11	CREW'S EXPENSE FOR FREEZER OPERATION PER DAY		12.50	7/81 12	0
12	CREW'S EXPENSE FOR NET REPAIR PER LB		0.02	7/81 12	0
13	BAY DIESEL PER GALLON		0.99	7/81 12	0
14	BAY ICE PER LB.		0.01	7/81 12	0

SUMMARY: MAXIMUM FILE SIZE = 200
NUMBER OF RECORDS IN FILE = 14

PART 2

BUDGET SIMULATION SYSTEM

INTRODUCTION

This manual includes general descriptions of the operations of the FORTRAN program; a description of each agenda, including operations performed in the called subroutines; and an Appendix with tables containing codes for variables, data description and data format information. It is intended that the user will first read the descriptive sections for a general understanding of operation; the user then can use the tables to set up data cards. Enough information is provided in the tables so that, with a little experience, the user can become familiar with all available options.

The optional variable cost section allows the user to add additional variable costs on a month-by-month basis. Payroll taxes also can be calculated. No agenda has to be included in this optional variable cost section, although they must in the preceding sections. These requirements are discussed fully within the agenda descriptions.

The final section discusses fixed costs. The user can select fixed cost items from the D-A files, read in individual fixed costs and select the taxes, insurance and break-even values which are to be calculated. The tax and break-even agenda must be the last agenda used, and all costs must be included before taxes are calculated. It is necessary to have tax calculations available to the program to calculate a break-even value after taxes. The agenda will be discussed in detail by sections, including descriptions of operations performed, formats for any data to be

entered and restrictions on where the agenda can be used in the control sequence.

Once the user is familiar with the general assembly of a control sequence, he may wish to use the option for stored budgets. The FORTRAN program can store a control sequence so the user can retrieve that flow, make changes if desired and run a budget. Running a stored budget is an alternative to re-entering the entire control flow, or the menu approach. This option will be discussed under the agenda that performs the operation.

The program's stored budget option presents a data management problem. If the user deletes a row from a D-A file that is used in a stored budget, he will be notified of this row's occurrence in each budget in which it is stored. This prevents users from generating financial statements for operations where felonious information may have been added or information required is not available. To provide this service in the data management section, it is necessary that file codes appear on any control sequence data card in the FORTRAN flow that contains a D-A row number. This code is a file number which will appear in columns 1 and 2 of each data card where a D-A row number appears in columns 13 through 16. The two-digit code varies from file to file. If the file code reference is used, a row number must appear in columns 13-16. Leaving these columns blank results in an error in the deletions in the COBOL program. These files are:

File	Card Specification (COBOL)	Code Reference (FORTRAN)
Catch	CATCHF	10
Catch Price	CPRICE	11
Fishing Effort	EFFORT	12
Engine	ENGINE	14

File	Card Specification (COBOL)	Code Reference (FORTRAN)
Equipment	EQPMNT	15
Gears	GEARSF	16
Hulls	HULLSF	17
Paying Passenger	PAYPAS	18
Periodic Cost	PCOSTS	19
Rates	RATESF	20
Fixed and Variable Cost	VCOSTS	21

The same general agenda card format is used for all agenda. There is a minimum of two cards for each agenda. The first card containts the four-letter KEY WORD representing that agenda in columns one through four. The last card (which in some cases may be the second card if no additional data are needed by that agenda) is the end card. This card contains the letters END* in columns one through four. There may or may not be data cards between these two cards. If data cards are required, the format may vary from agenda to agenda; the agenda's description tells what information must be entered on these cards. Fields left blank generally will be considered as zeros by the FORTRAN program. In some variables, the program has default values assigned to variables to reduce user input. Check each agenda for a default value. All numeric values must be right justified in their specified field.

It is important that the sections be used in the order listed below. The order of agenda is less important within sections. The order of agenda cards within a section will establish the order the items are printed out with a few exceptions. Any restrictions within sections will be noted with that agenda's description. The general flow of the control sequence

is given below.

General Operating Conditions

Agenda

1 - OUTO (optional)
Data Cards (1)
END*

2 - TITL (optional)
Data Cards (maximum of 100)
END*

3 - FOOT (optional)
Data Cards (maximum of 3)
END*

4 - OREP (optional)
Data Cards (maximum of 5)
END*

5 - ORPL (optional)
Data Cards (maximum of 5)
END*

6 - FINC
Data Card (1)
END*

7 - TXCR (optional) - must be used once to create tax file
Data Cards (22)
END*

8 - TXMD (optional)
Data Cards (maximum of 22)
END*

9 - TXWR (optional)
Data Cards (none)
END*

10 - SHRS or 11 - OSHR
Data Cards (1) (1)
END*

12 - OWNR (optional)
Data Cards (none)
END*

13 - ACCH
Data Card (1)
END*

14 - FISH or 15 - GROC and 16 - COMB
Data Cards (4) (1) (sets of 3)
END*

17 - PAYP (optional: if used with COMB, then must proceed COMB)
Data Cards (sets of 4)
END*

Initial Investment

Agenda

1 - HULL
Data Cards (1)
END*

2 - ENGN
Data Cards
END*

3 - EQMT
Data Cards
END*

4 - GEAR
Data Cards
END*

5 - OINV (optional)
Data Cards
Sum of 1-5 cannot exceed 100
END*

Optional Variable Cost

Agenda

1 - OVAR (optional)
Data Cards (unlimited sets of 3)
END*

2 - PAYR (optional)
Data Cards (maximum of 3)
END*

Fixed Cost

Agenda

```
1 - FIXC
    Data Cards (none to unlimited)
    END*

2 - OFIX (optional)
    Data Cards (unlimited)
    END*

3 - OMFX (optional)
    Data Cards (unlimited sets of 2)
    END*

4 - INSR
    Data Cards (1)
    END*

5 - TAXS            or          BTOT
    Data Cards (1)              (none)
    END*

6 - BRKE (optional)
    Data Cards (none)
    END*

7 - OPPC (optional)
    Data Cards (none)
    END*

    STOP
```

The STOP card contains the letters S-T-O-P in columns 1-4. This card is required for the program to know that there are no more agenda cards to be processed. If this card is omitted, depending on the system, the user will receive an end of file error message.

AGENDA DESCRIPTION

General Operating Conditions

Seventeen agenda cards can be used in the general operating conditions sections. Each agenda will be discussed, giving its four-letter key word, the operations that key word signals the program to execute and the data required by those subroutines to perform the necessary operations. Each agenda card and its data cards must be followed by an END* card.

Output Override Options

The key word in this agenda is OUTO. This agendum gives the user the option of selecting any of the outputs available from the budget simulator (see Table 2.15, Appendix). Outputs controlled by this agenda are Warning Messages, Initial Investment, Variable Cost in Units, Variable Cost in Dollars, Variable Cost Annual Summary, Variable Cost Categorized Summary, Detailed Annual Budget, Summary Annual Budget, Annual Cash Flow, Monthly Cash Flow, Cost per Unit of Effort, Captain's Statement and Crew's Statement. In this agenda a value of "1" on the data card allows the output to be printed. A zero or blank will suppress the printing of that output. All output codes are set to default at "1" so that if all outputs are desired, this agenda need not be used. If none of the outputs that have been designated a code are to be included, a blank card must be inserted between the OUTO card and the END* card. This agenda should be the first agenda in the control sequence.

Title

The key word for this agenda is TITL. In this agenda the title page is read in and printed out. This title page can contain up to 8,000 characters on which the user can uniquely describe the condition for this budget run. All 80 columns on up to 100 data cards can be used. This agenda can be omitted if the title page is not desired.

Footnote

This agenda is designated by the key word FOOT. This agenda contains the code to read in up to 240 characters that will be printed out at the bottom of each output. This option is available to provide readily accessible reminders of vessel characteristics being used in the current budget run. Any restrictions that may be included in the data for this run also can be noted here. The data will be printed out exactly as it appears in the 80 columns of three cards. Include only enough cards to hold the desired footnote, but do not exceed three cards.

Optional Repair Categories

This agenda, indicated by the key word OREP, allows the user to enter optional category titles for summarized repair divisions. Repair costs are calculated on a per item basis, but they appear summarized in some of the output forms. To increase user flexibility, five additional categories can be entered into the budget simulator. The titles and their codes are: Hulls -- 1; Engines -- 2; Gears -- 3; Equipment -- 4; and Electronics -- 5 (See Table 2.8, Appendix). As additional category items are entered, they will be assigned sequential codes beginning with 6. For example, an additional repair category for Nets would be assigned the code value of 6. This code, 6, should be used as the repair code summarization on the

inventory data to indicate which items are to be included in nets. Sixteen alphanumeric characters, entered one per data card, are required to employ this option. Up to five cards may be included in this agenda.

Optional Replacement Categories

The ORPL agenda enables the user to enter optional categories for replacements. Here again, replacements are calculated on an item-per-item basis. Users may want additional divisions to be noted on final summarized output forms. There are four summary categories already available in the program -- Gear, code 1; Equipment, code 2; Electronics, code 3; and Supplies, code 4 (see Table 2.9, Appendix). Replacement codes are assigned to those items that are replaced on a yearly basis. Replacement of capital items is based on the life stored in the D-A files. Up to five additional categories can be entered, and are assigned a sequential code beginning with 5 and ending with 9. These categories and codes are used similarly to the repair summarization categories and codes discussed previously. The data required to operate this agenda are 16 alphanumeric characters entered on separate data cards for each replacement category title desired.

Financial Information

The financial information agenda, with the key word FINC, reads in the object year, the planning horizon and an optional depreciation method. The object year is the year for which the budget, monthly cash flow and share statements are generated. The planning horizon is variable, but may not exceed 16 years. If no planning horizon is provided, it will default to the life of the hull or to 16 years, whichever is smaller. The next two fields are for entering beginning cash balance for the operation and the level at which the cash account is to be maintained. Both default to zero.

The program automatically takes out a short-term loan in any month in the planning horizon that the cash account falls below the desired level. If not paid off, this account is refinanced at the end of the year. In the first month that profit is made, any above the minimum level for the cash account is applied to repayment of interest on the cash balance maintenance loan and then to principal.

The optional depreciation method is an override value. The program defaults to straight line depreciation for all capital items that do not specify a depreciation method. To override the default method of depreciation for all capital items across the board, a user can enter the appropriate code on the data card in this agenda. This agenda requires only one data card to be entered. The code for depreciation is 1 for straight line, 2 for the sum of the year's digits and 3 for accelerated depreciation. This agenda card must precede the FISH or COMB agenda cards to be discussed later.

Tax Table Creation

This agenda, TXCR, allows the user to create or completely replace the tax table for federal income taxes. It automatically prints out the tax table. The data appear on 22 cards following the TXCR card. All 22 cards must be included even if left blank. Each card contains a row number for the row in the tax table where the tax data will be stored. The three other items on each card are the maximum income level, the base tax and percentage of tax on income over the initial income level.

The program's calculation of federal taxes compares the net income with the maximum income level stored in the tax table until the net income is above the preceding row's maximum income and below the current

row's maximum income level. At this point, the maximum income level of the preceding row is subtracted from the net income. Tax is calculated by applying the percentage rate found in the current row to the remainder, and adding that result to the base value in the current row. Examples of how to create the tax table and how the calculations work follow.

If you use 1980 rates for married sole proprietor with no dependents and the corporate income tax, the IRS tax schedule will approximate Example 1 below. The correct entry of this data into the tax table (using rows 1 through 5 for corporate tax data and rows 7 through 22 for sole proprietor) appears in Example 2.

EXAMPLE 1 - Tax Schedule

A. Corporate Income Tax

Taxable Income	Tax Percentage
< 25,000	17 %
$25,001 - 50,000	20 %
$50,001 - 75,000	30 %
$75,001 - 100,000	40 %
> 100,000	46 %

B. Sole Proprietor Tax Schedule

Schedule II. Married Taxpayers Filing Joint Returns, and Certain Widows and Widowers

If the amount of Taxable income is Over-	But Not Over-	The tax is	Of Excess Over-
$ 3,400 -	$ 5,500.....	$ 0 plus 14% -	$ 3,400
$ 5,500 -	$ 7,600.....	$ 294 plus 16% -	$ 5,500
$ 7,600 -	$ 11,900.....	$ 630 plus 18% -	$ 7,600
$ 11,900 -	$ 16,000.....	$ 1,404 plus 21% -	$ 11,900
$ 16,000 -	$ 20,200.....	$ 2,265 plus 24% -	$ 16,000
$ 20,000 -	$ 24,600.....	$ 3,273 plus 28% -	$ 20,200
$ 24,600 -	$ 29,900.....	$ 4,505 plus 32% -	$ 24,600
$ 29,900 -	$ 35,200.....	$ 6,201 plus 37% -	$ 29,900
$ 35,200 -	$ 45,800.....	$ 8,162 plus 43% -	$ 35,200
$ 45,800 -	$ 60,000.....	$ 12,720 plus 49% -	$ 45,800
$ 60,000 -	$ 85,600.....	$ 19,678 plus 54% -	$ 60,000
$ 85,600 -	$ 109,400.....	$ 33,502 plus 59% -	$ 85,600
$ 109,400 -	$ 162,400.....	$ 47,544 plus 64% -	$ 109,400
$ 162,400 -	$ 215,400.....	$ 81,464 plus 68% -	$ 162,400
$ 215,400.....		$ 117,504 plus 70% -	$ 215,400

EXAMPLE 2 Direct Access File Data Entry - Tax Table

Field 1	Field 2	Field 3	Field 4
Row #	Max Income	Base Value	% Rate
1	0	25000	17
2	25001	50000	20
3	50001	75000	30
4	75001	100000	40
5	100001	0	46
6			
7	3400	0	0
8	5500	0	14
9	7600	294	16
10	11900	630	18
11	16000	1404	21
12	20200	2265	24
13	24600	3273	28
14	29900	4505	32
15	36200	6201	37
16	45800	8162	43
17	60000	12720	49
18	85600	19678	54
19	109400	33502	59
20	162400	47544	64
21	215400	81464	68
22	9999999	117504	70

The following example may clarify the federal tax calculation for a sole proprietorship. For a sole proprietor with a net taxable income of $25,000.00, the tax would be calculated with the base value of $4,505.00 found on card (row number) 14, field 3 of the tax table. The maximum income from the preceding card (row) would be subtracted from $25,000 to obtain a difference of $400.00. This difference is then multiplied by the percentage value found in the fourth field of card (row) 14. The result of $128 is added to the base value, $4,505, to yield the tax obligation of $4,633. Income taxes are deducted in April of the following year.

Tax Table Modification

Agenda TXMD allows users to modify only those specific rows in the tax table that need to be updated. Up to 22 cards can be used, entering the row in the tax table to be changed and the updated information on initial income level, base tax and percentage.

Tax Table Print Out

Agenda TXWR writes the tax table from the direct access file to I-O unit 6. Users can review the current tax information and make necessary changes with either TXCR for complete revamping or TXMD for fewer changes.

Crew Share Agreements

The shares agenda, SHAR, must precede either the FISH or the combined species, COMB, agenda card. This agenda allows the user to alter the portion of the catch or an expense item that the captain or crew will share temporarily. It must be included if a crew and captain's share is to be calculated. No data cards are required if the default values for crew share appearing on rows 1 to 14 of the D-A RATESF file are used. Any value to be changed, other than to zero, can be entered on the data card that can

be used in the agenda. The data for this agenda appears on one card. There is a place for each percentage the captain and crew shares of catch and expenses. The first two items on the data card are the captain's and crew's share of the catch. The crew share is calculated for the entire crew, not just for one member. The third and fourth items of data are the captain's and crew's share of groceries. The grocery bill is charged to the vessel and the respective shares are subtracted from the gross crew share. Only the net crew's and captain's share of catch is charged against the vessel.

The crew's and captain's share of fuel is in the next two fields. This data can be adjusted for whether or not fuel is taken "off the top." If a variable cost item, such as fuel, is taken off the top, the crew share of that expense is the same as their share of the catch. The captain's and crew's share of oil expense is entered in the next two fields, followed by their share for all repairs, operational replacements (not capital replacements) and ice.

Again, if any variable expense item is taken off the top of the catch, it is the same as the crew share of the catch for that expense item. If percentages are taken off the total of gross captain and crew share, it is necessary to multiply the percentage the crew gets off the gross share by the percentage of the expense item to obtain the percentage to be entered. If, for example, 20 percent of the fuel is taken off the top of the share of the catch going to the crew and captain, and if the captain gets 55 percent of the share and the crew gets 45 percent, the crew is paying 20 percent times 45 percent of the fuel or 9 percent of the fuel. The number .09 is entered in the appropriate column on the data card for the shares agenda.

Optional Crew Share Agreement

This agenda can be used rather than the SHRS agenda. This optional OSHR is similar to SHRS except that the default values for the crew and captain's share in this agenda is zero. This agenda precedes the FISH or COMBO agenda in the control sequence. All fields representing variable cost items that are to be partially or totally shared with the crew should contain appropriate values. Only one data card can be used. Values are entered in this agenda as they are in the SHRS agenda.

Owner-Operator

The owner-operator agenda, OWNR, must procede the FISH or COMB agenda card and follow SHRS or OSHR. The key word, OWNR, indicates to the computer that the vessel is owner operated. It sets all the captain shares, including gross share of the catch, as well as expense shares to zero. There are no data cards required for this agenda. Only the key word card and the END* card are required.

Optional Title in Final Accounting Outputs

The ACCH agenda allows the user to input an optional variable heading that will appear on all final accounting forms. This agenda card must be proceded by the agenda for optional output, OUTO, if all outputs are not desired. The agenda allows the program to read in a descriptive title and it then will print that title in the heading of each final budgetary output. The agenda and END* cards must be included to print the budgetary output heading. The data card does not have to be included. Up to 32 alphanumeric characters appearing on one data card are required.

Single Species Fishing Patterns

The fishing patterns agenda for a single species is indicated by the

FISH agenda card. This allows the vessel to operate in a single species fishery. Effort is converted to percentages of hours-by-use type as read from the D-A EFFORT file. This agenda also calculates groceries for crew members, catch in pounds, revenue, ice, gross crew share and gross captain share. The first data card in this agenda indicates the first row (only the first row of 12 rows used is entered) in the D-A CATCHF file to be used. The next card contains the row number of the first row (of 12 rows used) in the D-A CPRICE file to locate appropriate price data. The third data card contains the first row (of 12 rows used) of the D-A EFFORT file desired for this budget.

The code for when fishing occurs is the first piece of information that must be entered on the fourth card. The code for this item is 1 if fishing activity occurs while the main engine is on with no load; 2 if fishing activity occurs when the main engine is on with a load; 3 if fishing activity occurs when the main engine is turned off; 4 if activity occurs when the auxiliary engine is running; 5 if activity is when the main engine is running with or without a load (the sum of 1 and 2); or 6 if fishing activity occurs anytime the vessel is at sea (the sum of 1, 2 and 3). The fishing code sets the hours designated by the code equal to the hours actual fishing activity occurs.

Catch is calculated by the program by multiplying the hours that fishing activity is occurring by the tenths of pounds of fish caught per hour, dividing by ten to keep the value in whole pounds. These values are summed over size categories and months to arrive at total catch. The total revenue is obtained by multiplying whole pounds caught per month and size by the corresponding prices stored in the D-A CPRICE file. Total

revenue is the summation of the individual values over size categories and months.

The next piece of data to be entered on the fourth data card is an optional grocery row. The default value is stored in row three of the D-A VCOSTS file. The next value entered is the number of crew members aboard the boat, not including the captain. Groceries are calculated by multiplying the number of crew members plus one (for captain) times the unit price of groceries times the days fished each month.

The last piece of data to be entered on the fourth data card is the optional row number in the D-A VCOSTS file for the price of ice. The default price of ice is found in row one of the D-A VCOSTS file. This row number cannot be checked for deletion by the data management program, so users should be careful when using this optional row and when deleting rows that contain a price for ice. The cost of ice is calculated by multiplying the pounds of fish caught by the ice coefficient to get total pounds of ice. The price of ice is multiplied by total pounds to get the cost of ice.

Grocery for Multiple Species

Both the COMB and GROC agenda can be used in place of the FISH agenda. The grocery agenda, GROC, must procede COMB. The data required appears on one card. The first variable is the number of crew members, not including the captain. The other piece of information that may appear on this card is an optional grocery row. This row is to be used if the default value appearing in row three of the D-A Fixed and Variable Cost file is not to be used. If an optional grocery row is used and you wish to be notified if this is to be deleted from the D-A files in the case of the stored budget, the number 21 should be entered in columns one and two of the same

card. The last piece of data to be entered is the optional row number for the price of ice. The default price of ice is found in row 1 of the D-A Fixed and Variable Cost file. This row number cannot be checked for deletion by the data management program, so the user should be careful when using this optional row and when deleting rows that contain a price for ice. The cost of ice is calculated in the manner described previously.

Multiple Species Fishing Patterns

Both the COMB and GROC agenda can be used in place of the FISH agenda. This is for combined species operations and for groceries calculations information. The COMB combined species agenda allows the user to combine one or more species. Users also should note that this agenda can be used instead of the FISH agenda to decrease or increase the amount of effort in a single species fishery. This agenda calculates effort cumulatively, so paying passengers can be combined if the paying passenger agenda precedes the COMB agenda. This agenda calculates and accumulates catch in pounds by species using effort and catch data by month. It then multiplies the catch per size by the dollar values stored for price per pound by size to obtain revenue by month. Catch, effort and catch prices all can be adjusted by a percentage. The data input required for this agenda is a set of three cards for each species desired. The first data card of a species set contains the first of the 12 consecutive rows containing the tenths of pounds of catch per hour found in the D-A CATCHF file. The next 12 fields are used to enter the catch percentages. If the vales stored in the D-A CATCHF file are acceptable, enter 1.00. The final data field is for the optional price of ice per pound. If this field is left blank, the value of row 1 in the D-A VCOSTS file is used.

The second data card of each set contains the first row of the 12 consecutive rows in the D-A CPRICE file where the appropriate price data is located. The next 12 data fields are used for the percentage adjustments for catch prices. If the values in the D-A CPRICE file are acceptable, the percentage 100%, entered as 1.00, should be used.

The first piece of information that must appear on the third data card is the fish code. The fish code is the same as discussed in the FISH agenda. It indicates to the program which time frame should be used for actual hours that fishing activity occurs. (See Table 2.2, Appendix for fish code values.)

The next data entry is the first row of the 12 consecutive rows locating the appropriate fishing patterns in the D-A EFFORT file. The final 12 data fields are used for the percentage adjustments on effort. Enter 1.00 if the hours appearing in the D-A EFFORT file are acceptable.

Blank fields will result in no effort exerted in that species for that month. Note that this agenda can be used to alter fishing patterns in one species by increasing that percentage up to 99.99 or decreasing that percentage down to .01 times the effort stored in the D-A files. A warning message will result if effort in any month exceeds 100 percent. This message, however, does not affect the calculations. This agenda does not permit entry of crew members by species by month, making it necessary to include the groceries agenda to get the necessary data to calculate groceries.

Paying Passengers

The key word for the paying passenger agenda, PAYP, signals the FORTRAN program to calculate the revenue for paying passengers and their

crew expenses. This agenda card can be combined with one or more paying passenger setups. It also can be combined with the combined species where regular fishing hours will be used to calculate catch. If combined with the COMB agenda, the paying passenger agenda card must precede the COMB card. The difference between the passenger fleet and regular fisheries is that the passengers are multiplied by days fished rather than the number of hours that the activity occurs, and paying passengers has its own D-A PAYPAS file for prices.

The data required by the paying passenger agenda appears on a set of three data cards for each paying passenger setup. Each set begins with a card containing the first row of the D-A CATCHF file where the passengers per day or trips per day are stored in 12 consecutive rows. The next 12 fields are to enter percentage adjustments on trips. Entering a 1.00 will retrieve the data exactly as stored in the D-A CATCHF file. The second card contains the first row of the 12 consecutive rows to be used for fares from the D-A PAYPAS file. The next 12 fields are for percentage adjustments on fares. Again, a 1.00 in each field will use the data as it appears in the D-A PAYPAS file. The third data card contains the first of 12 consecutive rows to be used from the D-A EFFORT file.

The are 12 fields allocated for entering percent by month for adjustment of errors. Here again, effort can be increased by entering a number greater than one or decreased by entering a number less than one. A warning message will be received, but it will not affect calculations. An additional piece of information is needed with paying passenger arrangements--the amount the crew and captain are paid per day. The wage per day for the captain and crew is entered in the fields following the percentage of

effort information on the third card.

A minimum of two agenda must be included under general operating conditions--the financial agenda and one operating agenda, either FISH, COMB or PAYP. These agenda provide the program with base data on revenue cost, effort, planning period and hours of operation. All other agenda are optional for the user to enter additional explanatory or optional override information.

Initial Investment

Within the initial investment section, the user selects the hull, engine, equipment and gear from the D-A file. The selected items are sorted to determine if they are operating investments or capital investments.

Repairs are calculated on the basis of information in the D-A files and the control sequence. Repair cost calculations are assumed linear and calculated on an item-by-item basis. Repair cost for a given item is calculated by multiplying the repair cost per hour stored in the D-A file by the hours the item is used from the D-A EFFORT file (indicated by a repair code, see Table 2.3, Appendix) times the repair percentage from the control sequence data card. Repair costs are summarized by categories, with appropriate category headings either user-supplied or default-supplied by the program (see Table 2.8, Appendix).

Items not designated as capital items in the D-A code are replaced on a yearly basis in the same quantity as the initial investment divided by the years of life in the D-A file. Capital items are replaced when the life stored in the D-A file expires. The user may submit, on an item-by-item basis, the depreciation method to override the default depreciation

method used by the program (see Table 2.1, Appendix). Any item that is selected in the initial investment section may be the object of a loan, either mid-term or long-term. There are codes available for the user to submit the type and duration of loan wanted (see Tables 2.4, 2.5, 2.6, 2.7 and 2.11, Appendix). Within the hull and engine agenda the program calculates haul-out expense and fuel and oil expense (see Tables 2.10 and 2.12, Appendix). Since these items are specific to those agenda, their algorithms will be discussed within the agenda.

The codes for repair timing, depreciation and loan information are similar for all items in the initial investment section.

There are five agenda cards available within the initial investment section: hull, designated by HULL; engines, ENGN; gear, GEAR; equipment, EQMT; and optional initial investory, OINV. Much of the data and resulting calculations and operations will be similar throughout this section. Details of common areas will be mentioned only briefly in the specific agenda.

Hulls

The hulls agenda, with the key word HULL, allows users to select a specific vessel for the FORTRAN run. This agenda gives information or codes that enable repairs, haul-outs on the hull, depreciation and loan costs to be calculated. The data card in this agenda must have the number 17 entered in columns one and two for stored budget data management. No quantity can be entered in this agenda since only one hull can be used.

The first piece of data is the row number for the hull in the D-A HULLSF file. The next data field is for the repair code. This number is used to indicate what type of timing is to be used to calculate repairs

(see Table 2.3, Appendix). Repair percent follows, indicating how to adjust repair from the normal stored in the D-A HULLSF file. A 1.00 should be entered if repairs are to be considered normal. Any number greater than 1.00 will increase repairs, and any number less will decrease the amount of repairs. The next piece of data information is repair category. These are the subdivisions that the repairs are put into for output in the summarized budgets and other final accounting outputs. If this field is left blank it will default to one, which is hulls. (See the repair codes listed in Table 2.8, Appendix.)

The haul-out code refers to the type of pricing to be used for haul-out (see Table 2.10, Appendix, for codes). A zero or blank left in this data field indicates that no haul-out should be calculated. If a zero is entered the expected life of the hull will be reduced to 70 percent of the original life stored in the D-A HULLSF file. The codes for pricing haul-outs using the information in the D-A HULLSF file are:

1 - to use unit price including labor and materials;

2 - to use the unit price for labor only;

3 - to use a percentage for haul-outs to determine price.

With the percentage for haul-outs, the computer calculates the haul-out unit price by multiplying that percentage times the original price of the hull. This allows the haul-out to increase in price as the price of the hull increases. To complete the calculation of haul-outs in the monthly and annual cash flow the program has to be told the time frame on the occurrence of the haul-out. This is accomplished by entering a row number from the D-A PCOSTS file. (Note: If this row is used in a stored budget, this row number will NOT be checked if the row is deleted from

the D-A PCOSTS file.)

The final section on the data card is common across the initial investment section. If the user wishes the depreciation to be other than the default, the code for depreciation can be entered on the data card (see Table 2.1, Appendix). Companion data information to be entered on the card is the percentage information if accelerated depreciation is selected. The default value of 2 is used, producing double declining balances. Any integer number up to nine can be entered for this field to accelerate depreciation.

The loan code tells the FORTRAN program if a loan is to be taken out on this item. If a zero is entered or the field is left blank, there will be no financing and all funds for the item will come from the cash account. A 1 requests a loan be taken out on the item, requiring the program to calculate the loan costs and balances. Defaults are provided for all loan parameters. The user may choose to override one or all defaults by entering data in the next fields. Percent to be paid down if the loan is taken out defaults to zero percent down. The user can enter an override percentage up to 99 percent. An optional interest rate can be entered if the user wants to override the interest. The default on the interest rate are the values stored in the D-A RATESF file. The value in row 17 is used for short-term loans; row 16 is used for mid-term loans (those greater than one year, but less than eight years); and row 15 is used for long-term loans (greater than seven years in duration). The loan term is the next optional item to be entered on the data card. If no number is entered, it defaults to the life of the item. If a number is entered as a loan term that is greater than the life of the loan, the program will auto-

matically decrease the term to the life of the item selected. The optional loan term will be used only if it is less than the life of the selected item.

The next three optional data items to be entered concern the type of payments to be made on the loan and interest compounding. The codes for the items appear in Tables 2.5, 2.6 and 2.7. They appear on the data card in the order of payment type code, payment schedule code and interest compounding code. Notice that there is only one data card in the HULL agenda. This means that the program is designed to operate on a per vessel basis, not a fleet basis.

Engines

The second agenda in the initial investment section is for the engine, ENGN. This agenda allows the user to enter as many engines as required by the vessel being equipped. The program assumes that the first data card in this agenda is the main engine(s). Every data card following that is considered to be an auxiliary engine by the program. This agenda sorts the engine by whether or not it is a capital investment item, calculates the cost of fuel, the cost of oil by the method designated by the user, the cost of repairs on the engine and the cost of replacing the engine, and allows the user to take out loans and depreciate the engine over its life. The number 14 should appear in columns one and two on each data card included in this section for stored budget data management purposes.

Each data card in this agenda can contain the number of quantity of engines desired of a particular type. The program defaults to one if no number is entered. Selection of the desired engine is indicated by entering the row number of that engine in the D-A ENGINE file. The next few

fields are similar fields discussed in the HULLS agenda. They are the repair and replacement data. The user can enter a code on each engine data card for the repair time frame, repair percentage (1.00 for normal) and repair category.

Oil calculations are specific to the engine agenda. This requires an oil code that indicates which method is to be used for calculating oil changes. A zero or blank is used when the oil change is calculated as the percentage of the fuel. The percentage is stored in the D-A file with the engine data information. If a 1 is entered for this variable, the oil change is calculated using the cost per change and the hours between oil changes (oil check) as stored with the engine information, and the number of hours the engine is running from effort file. The hours the engine is running is retrieved from the D-A EFFORT file, compared with the oil check and a change is performed every time the hours the engine has been running exceed this check.

The next engine specification calculation is fuel. Options available in the control sequence including entering an optional price of fuel on the engine data card(s). This piece of data information overrides the default value stored in row two of the D-A VCOSTS file. Another option available for varying the cost of fuel is by entering an optional fuel row when an alternate price of fuel has already been stored in the D-A VCOSTS file. (Note: This row number will not be included in the stored budget data management.) The program calculates the quantity of fuel by multiplying the hours the engine is running by the gallons of fuel that the engine uses per hour. The main engine calculation uses the figures for gallons with load and without load in the D-A ENGINE file times the

respective hours in the D-A EFFORT file. The auxiliary engine uses the gallons with load stored in the D-A ENGINE file times the hours the auxiliary engine is running in the D-A EFFORT file. There is only one time frame available for the auxiliary engines although more than one type of auxiliary engine may be put on board the vessel. The gallons consumed by each engine is multiplied by the default price or the indicated optional price to arrive at total cost of fuel. The price of fuel can be different with each engine to allow for diesel and gasoline operation.

The next section of data on each engine card is the financial information common across the initial investment section. This includes optional depreciation methods and loan information (see the HULL agendum for complete discussion).

Equipment and Gears

The next two agenda are used to enter items from the D-A EQPMNT and GEARSF files. The key words for these files are EQMT for the equipment file and GEAR for the gear file. Both agenda have the same data format. As many data cards as desired, up to 100 total inventory items, can be entered with each agenda card. Data cards are used until all desired equipment or gear, depending on the agenda, has been entered into the vessel's operations. These agenda calculate the initial investment, sorting by the capital code, depreciation and loan information on an item-per-item basis. Repairs also are calculated on hours the equipment is used and replacements are calculated either using the life for capital replacements or replacing the item every year if it is a noncapital item.

Data that must be entered on each data card underneath the equipment or gear file begins with a code in columns one and two. For the equipment

agenda, 15 must be entered in these columns; for the gear agenda, 16 must be entered. This number is used by the data management when items are deleted from the D-A file to keep stored budgets current. The next data field on each data cards contains the number or quantity desired for each selected item. If no quantity is entered, the program defaults the value to one. Selection of each item is accomplished by entering the row number in the direct access file on each data card. The next three fields contain repair information to calculate repairs. The repair code, repair percentage and repair category operate the same as those discussed in the HULL agenda.

Replacement of noncapital items occur in these two agenda and in the optional inventory agenda. Replacements are calculated on all items that are not considered capital investments. The next two fields concern how items are replaced on operating capital. The replacement percentage, which is the next item, is a percentage adjustment similar to repair percentage. If no number is entered in this field, replacement defaults to one divided by the life of the item as stored in the D-A file. This costs out the replacements of items at a percentage rate over their life even though they are not depreciated. Any noncapital item is replaced with the same quantity as the initial investment each year, and should have 1.00 entered for replacement percentage. Replacements can be increased or decreased by raising or lowering the percentage. The percentage increase is constant, not cumulative, over the planning horizon. The replacement category, very similar to the repair category, is used to summarize operational replacements. See the ORPL agenda for category codes. If no replacement is entered, it defaults to "equipment" for the equipment file and "gears" for the gear file.

The remaining data fields on each data card contain the depreciation and loan parameters. A full discussion of these is given in the HULL agenda.

Optional Inventory

The last agenda in this section is the optional inventory, indicated by the key word OINV. This agenda is used to enter inventory items that have not been included in the D-A file. The functions performed from this agenda's control of the program are the same as others in the initial investment section. Each item entered under optional inventory is sorted whether it is a capital item or an operating expense item, replacements are calculated and repairs are calculated on an hour-by-hour basis. The data required by this agenda are similar to the equipment and gears agenda, but include information that is otherwise stored in a D-A file.

The first card contains the quantity of the item and its unique description. This description can be up to 60 alphanumeric characters. The second card begins with the field designated for the original price of the item. This should be the unit price when the item is purchased at the beginning of vessel operation. In the case of used items, this should be considered the item's market price. A price up to $9,999,999.99 can be entered. The next data item entered on card two is the capital code. This tells the program if the item is to be depreciated. If it is not to be depreciated, a zero or blank is entered. A depreciable item is indicated by a 1.

The next four data fields are the repair cost, repair code, repair percentage and repair category. The repair cost is the dollar cost to repair the item for each hour it is used. The repair code, percentage

and category operate the same as that discussed in the HULL agenda. The next two fields for replacement calculations operate the same as those in the EQMT and GEAR agenda.

The next four items concern depreciation and involve a combination of information stored in the D-A files for other items and fields similar to all data cards in the initial investment section. The first field contains the expected life of the item, which is used for the depreciation span, capital replacement and operating replacement percentage.

The next field is the salvage value and is the percentage of original price entered in the first field of the second card. The next two fields contain the code for depreciation method discussed in the HULL agenda.

The final data fields on the second card for each selected item contain the loan parameters: loan code, percentage down, optional interest rate, loan term, payment type, payment schedule and interest compounding. If all data for the item have been supplied to this point, the user need only enter a 1 in the loan code for a loan to be taken out. The loan will default to short-term if no life is entered. The loan options work the same as those discussed in the HULL agenda.

This initial investment section allows the user to select and fully equip a vessel. Options have been allowed for the user to vary repairs, replacement, loan methods, depreciation methods and all financial information necessary to calculate loans. The program can accommodate only 100 total items from the Hulls, Engine, Equipment, Gear and Optional Inventory agendums together.

Variable Cost Agenda

None of the agenda in this section is required for program operation.

They are included to allow the user more flexibility in the type of cost to be included on the vessel. There are two agenda in this section, optional variable costs that have not been calculated elsewhere in the program and payroll deductions used to calculate salary costs for crew members.

Optional Variable Costs

The optional variable costs agenda uses the key word OVAR. This agenda allows the user to add any optional variable cost on a month-by-month basis. The agenda includes the optional variable cost in all outputs, it is added to the total variable costs and shows up in appropriate sections of the intermediate and final budget outputs. A percentage of the cost also can be passed on to the captain and crew. The data required for this agenda appear on three cards. The first contains the title of the optional variable cost item, which can be up to 36 alphanumeric characters. This title should uniquely describe the variable cost item so the user can identify this cost on the output. The next 12 fields, beginning on card one and ending on card three, are used to enter the variable cost by month. The amount expended on this item per month, not to exceed $9,999,999.99, should be entered in each of these fields.

The last two data fields on the third data card of each optional variable cost are to share the cost of the item with the captain and crew. A separate percentage can be entered for captain and crew. The program will allocate that percentage of the variable cost to the captain and crew, subtracting it from their gross share of the catch.

This agenda can handle any number of variable cost items. Each optional variable cost item that is added must use three cards. Blank

cards must be used if the field contain no information.

Payroll Taxes

Although most fishing vessels do not pay their crews as salaried employees, we have included the options for the exceptional fishery and for easy assessment of a change in tax laws on this matter. The key word for the payroll taxes agenda is PAYR. There are three types of payroll deductions available--Workman's Compensation, employee social security and unemployment insurance. The first data field contains the code to indicate which payroll deduction is to be calculated. The second field is to enter an optional row from the D-A RATESF file to be used as the rate rather than the default value stored on the default row. The default rows in the rate file are 27 for social security, 28 for unemployment and 23 for Workman's Compensation. The final optional data field is used to enter a value for the cut-off income level for deductions. This value overrides the default values stored in the D-A VCOSTS file. The default row for the maximum income level for social security is row 4 and for unemployment is row 5. One data card must be submitted for each deduction requested. No more than three data cards can be used.

Fixed Costs

The fixed cost section contains agenda that provide fixed cost calculations, optional fixed cost entry, insurance calculations, tax calculations, budget totaling and optional break-even value calculations.

Fixed Cost

The fixed cost agenda, using the key word FIXC, enables the user to select the fixed cost items desired from the fixed and variable cost D-A

file. As many items as desired can be included, with one item per data card. The information needed on each data card begins with the number 21 in columns one and two for stored budget data management purposes. The only other information that needs to be supplied is the quantity desired of each item and the row number from the D-A VCOSTS file. There will be no fixed cost calculated in no cards are used. The agenda card and its END* card must be included even if no data is entered to signal the program that the variable cost section is completed and the fixed cost section is beginning.

Optional Fixed Cost

If a fixed cost not in the D-A VCOSTS file is needed, the user can either add that item permanently to the file with the data management program or add it temporarily with the OFIX agenda. This agenda needs the data information provided by the D-A file and the control sequence to perform the same functions as the fixed cost agenda. The first data field is for entry of the unique description of each optional fixed cost. The description can be up to 36 alphanumeric characters. The quantity desired is entered in the next field, using up to eight digits. The last data field is for the cost per unit of each item. Only the unit price should be entered, not total cost. As many optional items can be included as the user desires, using one data card per item. Items entered with this agenda are accounted for in December on the Monthly Cash Flow statements.

Optional Monthly Fixed Cost

This agenda, with the key word OMFX, is designed to enable the user to enter any fixed cost item that is incurred in a month other than December. December is the month arbitrarily selected to cost out the fixed cost

that are not entered with this agenda for the Monthly Cash Flow statement.

The data required for this agenda are on three cards, beginning with a 36-alphanumeric-character unique description. This is followed by 12 fields to enter the amount of cost incurred by this item in each month. Blank fields will be read as no cost for that month. As many sets of data cards can be used as there are optional monthly fixed costs to be entered.

Insurance

The next available option is insurance for the vessel. Insurance can be included by using the agenda card with the key word INSR in columns one through four. This agenda enables the user to select the type of insurance wanted. All insurance within this agendum is calculated as a percentage of the value indicated by the user. Insurance cost becomes the percentage of insurance times the total value designated to be insured by the user. More than one insurance card can be included to allow different rates on capital investments and operating investments.

The required data begins with an insurance code indicating the base value to be used. The codes are 1 for total investment; 2 for capital investment; 3 for operating investment; and 4 for the price stored for the hull. The first three values are found at the bottom of the initial investment output. The next field on each data card is used if an optional rate is to be used. This rate is the percentage rate to be multiplied times the base value. If a number is entered in this field, it will override the value stored in the D-A RATESF file on rows 19, 20, 21 and 22 for total investment, hull value, capital investment and operating investment, respecitvely. If the percentage in the default row of the D-A RATESF file is not that needed but there is a percentage in another row

of the D-A RATESF file that is usable for insurance calculations, the user can indicate this by entering the optional row number. This tells the computer to go to a different row to pick up the insurance rate for calculations. If an optional row is used and the user wants to have the stored budgets updated when deletions occur, the number 20 must appear in columns one and two of each data card. The user can select more than one insurance calculation with this agenda, but each needs a separate card. No more than four data cards should be used.

Taxes

This agenda, with the key word TAXS, calculates the taxes that the user wants included in vessel operation. The program can calculate property tax, owner-operator's social security tax, state income tax, federal income tax and optional investment tax credit. There are codes available on the data cards to indicate which taxes should be included. Those taxes wanted are indicated with a 1; a zero or blank space omits the optional tax calculation. The exception is the code for federal income tax options. The field should be left blank if no federal income tax is to be calculated. If the user wants to have corporate income tax calculated on a federal level, a 1 should be entered. A 2 should be entered to have a sole proprietorship income tax calculated for federal purposes using a joint filing status. The methods used to calculate each tax option are described briefly.

Property tax requires two factors, a percentage rate and a milrate found in the D-A RATESF file in rows 29 and 30, respecitvely. Actual value is multiplied times the percentage rate to get a taxable value which is taxed at the milrate. Optional values can be entered as the fifth and

sixth items on the data card if the user wants a value other than those in the D-A RATESF file.

Owner-operator social security is calculated using net revenues before taxes. The net revenue before taxes is checked against the maximum income to be taxed found in D-A VCOSTS file in row 6. This value is then multiplied times the social security rate found in row 31 of the D-A RATESF file. Optional values can be entered in items seven and eight on the data card if the user wants something other than those stored in the D-A file.

State income tax is calculated as a percentage of federal income tax. This percentage rate is found in row 36 of the D-A RATESF file. An optional value for the percentage rate can be entered as item ten on the data card if the one in the D-A RATESF file is not appropriate.

Only the number for tax codes have to be entered on the one data card required by this agenda. All other fields can be left blank and will not affect the operation of the program. The default rates and income levels found in the D-A files will be used. Besides calculating the taxes, this agenda also totals the revenue, variable costs deductions and fixed costs deductions, and prints out the budget totals on the financial statements. This makes it necessary to use the agenda card BTOT to total the budget if the user does not use this agenda.

Budget Total

The agenda card BTOT indicates to the computer that a budget total needs to be calculated. This card is used when taxes are not calculated. The agenda totals the revenue, subtracts variable and fixed costs, and prints out the appropriate total on the final accounting outputs. This agenda must be included in any control sequence where there are no taxes

requested. No data cards can be entered here.

Opportunity Cost

The agenda OPPC provides inclusion of opportunity cost into the budget outputs. Opportunity cost for equity and management are allowed. Opportunity cost of original equity is a percentage rate return times the value of the original equity. Opportunity cost for management is a flat figure based on next best alternative for employment. There are defaults for both values in the D-A file as well as the option to enter overrides. If overrides are desired, a data card should be used here. The first field is for the percentage rate for return to equity. The default for this is found on row 24 of the D-A RATESF file. The second field is for the opportunity cost of management. The default for this is found on row 7 of the D-A VCOSTS file.

Break-Even Values

The final option available calculates break-even values. If wanted, the agenda card BRKE should be entered in the control sequence as the final agenda card. This card calculates break-even values; there is no data required. Break-even values are calculated in three different areas, pounds of catch, price of catch and price of fuel. Each break-even price is calculated to include variable costs, fixed and variable costs, costs including taxes and costs including opportunity costs.

Twelve break-even calculations are received if the BRKE agenda is selected. The break-even price of fuel is included because of the recent importance of fuel as a restricting input in a vessel's operation. This price is calculated by holding everything else constant and seeing how far the price of fuel could rise given the amount of catch, the price of

catch and other variable costs. The break-even price of fuel becomes the difference between revenue and other costs, using a given number of gallons of fuel consumed.

This concludes the section on agenda. The appendix contrains tables that enable the user to construct a control sequence. Table 3 contains the variable names as actually used in the program, a brief description of the nature of the variable, its FORTRAN format and the column numbers on the data card in which that variable should be entered. Table 2 contains all the codes referenced throughout the text. The user can consult Table 2 when entering codes on the control sequence data cards.

Net present value is one function that the program calculates automatically. Net present value appears at the bottom of the first page of the annual cash flow. Its calculation considers the beginning equity to be the sum of the down payments of items in the first year and the beginning cash balance. It includes the net cash flow from total inflows minus outflow and assumes all capital assets are liquidated at the end of the planning horizon. Since income tax is paid in April of the following year, income taxes payable in the final year include those that would have been due in the planning horizon plus one year.

STORED BUDGET

The budget simulator can take workable control sequences and store them as budgets on a stored budget master file. These budgets can then be recalled, have temporary or permanent modifications performed on them, bet used in a run of the simulator, and be re-stored as a new budget with the permanent modifications. This section discusses how to construct the necessary control sequences to execute any of these functions.

Stored budgets enables the user to do three things--manage the stored budget master file; run retrieved budgets that have been recalled from the stored budget master file; and modify a retrieved budget and store it as a new stored budget. The first capability allows the user to add to, delete from, condense and list the stored budget master file. Combinations of these functions also may be used. The second capability of the stored budgets enables the user to retrieve a stored budget from the master file, run it, modify it and then run the new budget. The third capability enables the user to store the modified version of the retrieved budget as an entirely new stored budget.

Management of the Stored Budget Master File

There are five basic options for management of the stored budget master file. These are adding a new budget; listing stored budgets; deleting stored budgets or parts of budgets; condensing the stored budget file; and combinations of the previous four.

OPTION #1 - Add a new stored budget to the stored budget file, only. This option automatically gives a file listing.

		Format	Column
Card 1	SBPR	A4	1-4
Card 2	ADD	A4	5-8
	Budget code name (B). Include the "B" and a unique 3 digit number, e.g. "B001).	A4	10-13
Card 3	END*	A4	1-4
Cards	Control-stream to be stored		

OPTION #2 List the stored budget file, only.

		Format	Column
Card 1	SBPR	A4	1-4
Card 2	LIST	A4	5-8
Card 3	END*	A4	1-4

The stored budget master file listing contains three sets of information: (1) "Row NUMBER", (2) "COLS 1-4" and (3) "COLUMNS 5--------84". Row NUMBER contains the absolute row number of the file. COLS 1-4 contains the relative row number of each stored budget. ROW "1" of each budget contains the budget code name "B " only. ROW "2" begins the actual budget. COLUMNS 5-----84 contains the stored budget.

OPTION #3 - Delete one section of contiguous lines from the stored budget, only.

		Format	Column
Card 1	SBPR	A4	1-4
Card 2	DLET	A4	5-8

Card 3	The beginning absolute "ROW NUMBER" of the budget which is to be deleted from. That is, this row always contains the budget code name (B).	I4	5-8
	The beginning relative row number "COL 1-4" of the lines that are to be deleted.	I4	10-13
	The last relative row number "COL 1-4" of the lines that are to be deleted.	I4	15-18

OPTION #4 - Condense the stored budget master file, only.

		Format	Column
Card 1	SBPR	A4	1-4
Card 2	COND	A4	5-8
Card 3	END*	A4	1-4

When you delete lines from the stored budget master file it produces "holes" in the file. The user will want to condense the file to get rid of these holes. Note: When this is done all of the lines in the stored budget master file are renumbered. These options require access to a direct access file on I/O unit 37 of the same record length and number of records as the stored budget file.

OPTION #5 - Combining two or more of the above four options Combining the above options must always be done in the following order.

		Format	Column
Card 1	SBPR	A4	1-4

1. Deletions enter Card 2 from Option #3 as many times as needed.
2. Condensing enter Card 2 from Option #4 once only.
3. Additions enter Card 2, Card 3 and new

budget cards to be added from Option #1. Only one new budget at a time can be added.

4. List enter Card 2 for Option #2.

NOTE: These must always appear in the above order.

Running Retrieved Budgets

This section is to be used when making runs with a budget retrieved from the stored budget master file. Four options are available to the user for running retrieved budgets from the stored budget master file. These are: (1) Retrieving and running a budget from the stored budget master file with no modifications; (2) inserting a new section within retrieved budget and running the modified budget; (3) performing multiple inserts within a retrieved budget and running the modified budget; and (4) deleting sections from a retrieved budget and running the budget.

OPTION #1 - Retrieving and running a budget from the stored budget master file with no modifications.

		Format	Column
Card 1	"SBFL"	A4	1-4
Card 2	"SBGT"	A4	1-4
Card 3	The beginning absolute "ROW NUMBER" of the budget to be retrieved.	I4	5-8
	The beginning relative row number "COLS 1-4" of the budget to be retrieved. NOTE: Usually this relative row number is "2" because "1" always contains budget code name and is not retrieved.	I4	10-13
	The last relative row number "COLS 1-4" of the budget to be retrieved.	I4	15-18
Card 4	END*	A4	1-4

		Format	Column
Card 5	STOP	A4	1-4

OPTION #2 - Inserting a new section within a retrieved budget and run the modified budget.

		Format	Column
Card 1	SBFL	A4	1-4
Card 2	SBGT	A4	1-4
Card 3	The beginning absolute "ROW NUMBER" of the budget to be retrieved.	I4	5-8
	The beginning relative row number "COLS 1-4" of the budget to be retrieved. NOTE: Usually this row is equal to "2" for first insertion.	I4	10-13
	The last relative row number "COLS 1-4" prior to the entry of the new data	I4	15-18
Card 4	SB++	A4	1-4
Cards	Data cards to be inserted into the stored budget		
Card 5	SB--	A4	1-4
Card 6	The beginning absolute "ROW NUMBER" of the budget to be retrieved. NOTE: Same as Cols. 5-8 on Card 3.	I4	5-8
	The first relative row number "COLS 1-4 of the remaining section of the budget being retrieved.	I4	10-13
	The last relative row number "COLS 1-4" of the budget being retrieved.	I4	15-18
Card 7	END*	A4	1-4
Card 8	STOP	A4	1-4

OPTION #3 - Multiple inserts within a retrieved budget. This is the same as Option #2 except cards 3 through the "CARDS" following card 4 are repeated for as many inserts as

needed. Notice: Use Cards 1 and 2, then the multiple inserts, and conclude with cards 6, 7, and 8. Note: If an insert is at the end of the budget conclude with cards 7 and 8.

OPTION #4 - Delete a section within a retrieved budget and run the modified budget

		Format	Column
Card 1	SBFL	A4	1-4
Card 2	SBGT	A4	1-4
Card 3	The beginning absolute "ROW NUMBER" of the budget being retrieved.	I4	5-8
	The beginning relative row number "COLS 1-4" of the budget being retrieved. NOTE: Usually this row number is equal to "2" for the first deletion.	I4	10-13
	The last relative row number "COLS 1-4" prior to be deleted.	I4	15-18
Card 3	END*	A4	1-4
Card 4	SB—	A4	1-4
Card 5	The beginning of absolute "ROW NUMBER" of the budget being retrieved. NOTE: Same as Cols. 5-8 on Card 3.	I4	5-8
	The first relative row number "COLS 1-4" of the remaining section of the budget being retrieved.	I4	10-13
	The last relative row number "COLS 1-4" of the budget being retrieved.	I4	15-18
Card 6	END*	A4	1-4
Card 7	STOP	A4	1-4

OPTION #5 - Multiple deletions within a retrieved budget. This is the same as Option #4 except cards 3 through 5 are repeated for as many deletions as needed. Notice: Use cards 1 and 2, then the multiple inserts, and follow with Cards 6 and 7.

OPTION #6 - Storing and Modified Retrieved Budget. The only function of this section is to allow the user to store a modified retrieved budget as a new stored budget. The user should initially test-run the modified retrieved budget by using the capabilities of the Running and Retrieved Budgets section. When the modifications produce an error-free run, the modified version is ready for storage in the stored budget master file.

		Format	Column
Card 1	SBFL	A4	1-4
Card 2	SBPR	A4	1-4
Card 3	ADD	A4	5-7
	Budget Code Name (B)	A4	10-13
Card 4	END*	A4	1-4
Cards	Any one of the options from the running and Retrieved Budgets section. However, the SBFL card must be omitted from these.		

APPENDIX

Table 2 - Summary of Codes
(In order of appearance in text)

1. Depreciation Methods Code

Code	Meaning
1	Straight line
2	Sum of the years digits
3	Accelerated depreciation

2. Fishing Activity Code

Code	Meaning
1	Hours stored in Main Engine with No Load in Effort File are used for Hours Fishing Activity
2	Hours stored in Main Engine With Load in Effort File are used for the hours of fishing activity
3	Hours stored in Main Engine Not Running in Effort File are used for Hours of Fishing Activity.
4	Hours stored in Auxiliary Engine in Effort File are used for Hours of Fishing Activity.
5	Hours the Main Engine is Running the sum of (1) & (2), is used for Hours of Fishing Activity.
6	Hours at Sea, the sum of (1), (2) and (3) above, are used for the Hours of Fishing Activity.

3. Repair Hours Used Codes

Code	Meaning
Blank or 0	No repair cost calculated for that item (can also be done with repair % on data card = 0 or repair cost in D-A file 0.00)
1	Repairs calculated using Hours Main is Running Without Load in Effort file

2	Repairs are calculated using Hours Main Engine is Running With Load in Effort file
3	Time in Hours Main Engine is off in Effort file is used for calculating repairs
4	Time Auxiliary Engine is Running in Effort file is used to calculate repairs
5	Total Hours Main Engine is used to calculate repairs (sum of hours in (1) & (2)
6	Total Hours at Sea used for repairs (sum of hours for codes 1, 2 and 3)

4. Loan Codes

Code	Meaning
Blank or 0	No Loan for this item
1	Loan is to be taken out for this item

5. Loan Payment Type Codes

Code	Meaning
1	Equal payments
2	Decreasing payments
3	Increasing payments

6. Loan Payment Schedule Codes

Code	Meaning
1	Monthly payments
2	Quarterly payments
3	Annual Payments

7. Interest Calculation Codes

Code	Type of Compounding
1	Monthly
2	Quarterly
3	Annual

8. Repair Summarization Codes

Code	Title for Repair Subcategories
1	Hull
2	Engine
3	Gear
4	Equipment
5	Electronics
6	(Optional title supplied by user)
7	" " " " "
8	" " " " "
9	" " " " "
10	" " " " "

9. Replacement Summarization Codes

Code	Title for Replacement Subcategories
1	Gear
2	Equipment
3	Electronics
4	Supplies
5	(Optional title supplied by user)
6	" " " " "
7	" " " " "
8	" " " " "
9	" " " " "

10. Haul-Out Codes

Code	Meaning
0	No haul-out, life reduced by 30%
1	Haul-out cost is determined by using price stored in Hulls File for Haul-out including materials and labor
2	Haul-out cost is determined by using price in Hulls File for Haul-out with only materials included
3	Haul-out cost is determined by using the Haul-out Percentage stored in the Hulls File. The percentage is multiplied times the price of the hull to get the unit price of a haul-out.

11. Interest Rate Default Rows

Loan Term	Row in Rates File
Short-term (less than 1 year)	17
Mid-term (between 1 and 7 years)	16
Long-term (greater than 7 years)	15

12. Oil Codes

Code	Meaning
0	Oil cost is calculated using percentage stored in engine file under oil %, times the total cost of fuel
1	Oil cost is calculated using cost per oil change (from Engine file), hours running (from effort file), and the check (from Engine file) to time the oil change

13. Insurance Codes

Code	Meaning
1	Total investment is used for base value
2	Capital investment is used for base value
3	Operating investment is used for base value
4	Price of hull in hull file is used for base value

14. Federal Income Tax Codes

Code	Meaning
0	No federal income tax will be calculated
1	Corporate tax rates will be used for calculating federal income taxes

2	Joint filing status will be used for federal income tax calculations

15. Printer Codes for Optional Outputs

Printer Codes	Output
IPRT1	Warning messages
IPRT2	Initial investment
IPRT3	Variable cost in units
IPRT4	Variable cost in dollars
IPRT5	Variable cost in annual summary
IPRT6	Variable cost summary
IPRT7	Detailed annual budget
IPRT8	Summary annual budget
IPRT9	Balance sheet
IPRT10	Annual cash flow
IPRT11	Monthly cash flow
IPRT12	Cost per unit of effort
IPRT14	Captain's statement
IPRT15	Crew's statement

Value of zero or blank will supress the output, a 1 will have that output printed.

16. Payroll Deduction Codes

Code	Type of Deduction
1	Workman's Compensation
2	Employee Social Security
3	Unemployment Insurance

TABLE 3

INPUT FORMAT

The agenda are listed in this table in the order they appear in the FORTRAN flow, if they are used with the exception of the PAYP agenda. If more than one data card is used, a sub-heading for the number of data cards is used. If this heading does not appear, then there is only one possible data card, or one data card per entry (such as initial investment items) into the Vessel Budget Simulation System.

****
*
* 1. Agenda: OUTO (col. 1-4, 1st card) *
*
****

Variable Name	Description	Format	Col.
IPRT1	Warning message output code	I1	5
IPRT2	Initial capital investment description output code	I1	7
IPRT3	Variable input by month in units output code	I1	9
IPRT4	Variable input by month in dollars output code	I1	11
IPRT5	Variable input annual summary output code	I1	13
IPRT6	Variable input summary of variable cost output code	I1	15
IPRT7	Detailed annual budget output code	I1	17
IPRT8	Summary annual budget output code	I1	19
IPRT9	Balance sheet output code	I1	21
IPRT10	Annual cash flow output code	I1	23
IPRT11	Monthly cash flow output code	I1	25
IPRT12	Cost per units of effort output code	I1	27
IPRT14	Share statement for captain output code	I1	29
IPRT15	Share statement for crew output code	I1	31

END* (col. 1-4, last card).

Limitations: This must be the first agenda in the control flow. Zero or blank in a field will supress the printing of the output. 1 (One) will allow the output to be printed. If this agenda is not used, all listed outputs will be printed. (For discussion see section 1.1 on page 8 and Table 2.15, Appendix.)

****
* *
* 2. Agenda: TITL (col. 1-4, 1st card) *
* *
****

Variable Name	Description	Format	Col.
Data Cards 1-100:			
TITLIN (I), I=1,20	General description of vessel operations	20A4	1-80

END* (col. 1-4, last card).

Limitations: All columns may be used on each data card. Up to 100 separate cards may be used. Blank cards may be used for spacing purposes. (For discussion see Section 1.2 on page 9.)

****
* *
* 3. Agenda: FOOT (col. 1-4, 1st card) *
* *
****

Variable Name	Description	Format	Col.
Data Cards 1-3:			
FOOT (I), I=1,60	Variable footnote	20A4	1-80

END* (col. 1-4, last card).

Limitations: All columns may be used. Up to 3 cards may be used to enter description that will appear at the bottom of each output. (For discussion see Section 1.3 on page 9)

****
* *
* 4. Agenda: OREP (col. 1-4, 1st card) *
* *
****

Data Cards 1-5:			
REPTTL (I,J), I=1,4	Optional category title for repairs	4A4	5-20

END* (col. 1-4, last card).

Limitations: Up to 5 additional categories may be added. They are assigned codes sequentially beginning with 6. each category added needs its own data card. (For discussion see Section 1.4 on pages 9-10 and Table 2.8 in Appendix).

****
*
* 5. Agenda: ORPL (col. 1-4, 1st card) *
*
****

Variable Name	Description	Format	Col.
Data Cards 1-5:			
RPLTTL (I,J), I = 1,4	Optional category titles for relacements	4A4	5-20

END* (Col 1-4, 1st card)

Limitations: Up to 5 categories may be added. They are assigned codes sequentially beginning with 5. Each category title needs its own data card. (For discussion see section 1.5 on page 10 and Table 2.9 in Appendix).

****
*
* 6. Agenda: FINC (col. 1-4, 1st card) *
*
****

Variable Name	Description	Format	Col.
OBJTYR	Object year for calculation of annual budget.	I2	5- 6
PLANHZ	Planning horizon for vessel operation	I2	8- 9
CASH$(1)	Initial cash	F10.0	11-20
BALMIN	Minimum cash balance	F10.0	22-31
IDEPMD	Optional overide of default depreciation method for capitalized initial investment items. Codes are given in Table 2.1, Appendix. (This field may be left blank).	I1	11

END* (col. 1-4, last card).

Limitations: Only one data card. (For discussion see Section 1.6 on page 11).

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*                                         *
*   7. Agenda: TXCR (col. 1-4, 1st card)  *
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Variable Name	Description	Format	Col.
Data Cards 1-22:			
II	Row number for tax data in the D-A tax table file	I6	6-11
TAX(II,1)	Maximum income level	I6	13-18
TAX(II,2)	Base Tax	I6	20-25
TAX(II,3)	Tax percentage rate	I6	27-32

END* (col. 1-4, last card).

Limitations: All 22 data cards must be included. (For discussion see Section 1.7 on pages 11-14).

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*                                         *
*   8. Agenda: TXMD (col. 1-4, 1st card)  *
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Variable Name	Description	Format	Col.
Data Cards 1-22:			
II	Row number to update tax data in D-A tax table file	I6	6-11
TAX(II,1)	Maximum income level	I6	13-18
TAX(II,2)	Base Tax	I6	20-25
TAX(II,3)	Tax percentage	I6	27-32

END* (col. 1-4, last card).

Limitations: As few as one or as many as 22 data cards may be used. (For discussion see Section 1.8 on page 14).

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*                                         *
*   9.  Agenda:  TXWR (col. 1-4, 1st card) *
*                                         *
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END* (col. 1-4, last card).

Limitations: No data cards required. This agenda simply writes out the D-A tax table. (For discussion see Section 1.9 on page 14).

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*******************************************
*                                         *
*  10.  Agenda:  SHRS (col. 1-4, 1st card) *
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*******************************************
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Variable Name	Description	Format	Col.
CRWSHR	Crew's % share of total catch (Example: 33% is entered as .33)	F3.2	5- 7
CAPSHR	Captain's % share of total catch	F3.2	9-11
CRWGRO	Crew's % share of total grocery bill	F3.2	13-15
CAPGRO	Captain's % share of total grocery bill	F3.2	17-19
CRWFUE	Crew's % share of total fuel bill	F3.2	21-23
CAPFUE	Captain's % share of total fuel bill	F3.2	25-27
CRWOIL	Crew's % share of total oil bill	F3.2	29-31
CAPOIL	Captain's share of total oil bill	F3.2	33-35
CRWRPR	Crew's % share of total repair bill	F3.2	37-39
CAPRPR	Captain's % share of total repair bill	F3.2	41-43
CRWRPL	Crew's % share of total replacement of operating items	F3.2	45-47

CAPRPL	Captain's % share of total replacement of operating items	F3.2	49-51
CRWICE	Crew's % share of total ice bill	F3.2	53-55
CAPICE	Captain's % share of total ice bill	F3.2	57-59

END* (col. 1-4, last card).

Limitations: This agenda or OSHR has to be used and can optionally change all the values stored for the share system in the D-A RATESF file. Any field left blank will take that % to be the value stored in the Rate file. Only one card may be used. If the stored values are to be used no data card has to be used. This agenda must appear in the control flow before the COMB or FISH agenda. (For discussion see Section 1.10 on pages 14-16.)

****
* *
* 11. Agenda: OSHR (col. 1-4, 1st card) *
* *
****

Variable Name	Description	Format	Col.
CRWSHR	Crew's % share of total catch (Example: 42% is entered as .42)	F3.2	5- 7
CAPSHR	Captain's % share of total catch	F3.2	9-11
CRWGRO	Crew's % share of total grocery bill	F3.2	13-15
CAPGRO	Captain's % share of total grocery bill	F3.2	17-19
CRWFUE	Crew's % share of total fuel bill	F3.2	21-23
CAPFUE	Captain's % share of total fuel bill	F3.2	25-27
CRWOIL	Crew's % share of total oil bill	F3.2	29-31
CAPOIL	Captain's share of total oil bill	F3.2	33-35

CRWRPR	Crew's % share of total repair bill	F3.2	37-39
CAPRPR	Captain's % share of total repair bill	F3.2	41-43
CRWRPL	Crew's % share of total replacement of operating items	F3.2	45-47
CAPRPL	Captain's % share of total replacement of operating items	F3.2	49-51
CRWICE	Crew's % share of total ice bill	F3.2	53-55
CAPICE	Captain's % share of total ice bill	F3.2	57-59

END* (col. 1-4, last card).

Limitations: This agenda may be used instead of the SHRS agenda . OSHR must also appear before the COMB or Fish agenda. (Note: One of the two, SHRS or OSHR must be used if a crew share is to be calculated.) Any blank field in this agenda will result in zero percentage for that share of catch or expense. One data card must be used. (For discussion see Section 1.11 on page 16)

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*                                         *
*  12.  Agenda:  OWNR (col. 1-4, 1st card) *
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END* (col. 1-4, last card).

Limitations: No data cards. Must appear after SHRS or OSHR agenda. This agenda sets all the Captain's shares to zero. (For discussion see section 1.12 on page 16).

****
* 13. Agenda: ACCH (col. 1-4, 1st card) *
****

Variable Name	Description	Format	Col.
ACCTTL	Optional title that appears on all final accounting outputs	8A4	5-36

END* (col. 1-4, last card (2 OR 3)).

Limitations: Only one data card may be used. Agenda card and END* card must be included to get headings for final accounting forms, data card is optional. This agenda must come after FINC and SHRS or OSHR agenda. (For discussion see Section 1.13 on pages 16-17).

****
* 14. Agenda: FISH (col. 1-4, 1st card) *
****

Variable Name	Description	Format	Col.
Data Card 1:			
CONTRL	Code for D-A CATCHF file ('10 ')	A4	1- 4
FISHID	Enter first row of the 12 consecutive rows of appropriate catch data	I4	13-16
Data Card 2:			
CONTRL	Code for D-A CPRICE file ('11 ')	A4	1- 4
IPRCRW	Enter first row of the 12 consecutive rows of appropriate price data.	I4	13-16
Data Card 3:			
CONTRL	Code for D-A EFFORT file ('12 ')	A4	1- 4
IEFFRW	Enter first row of the 12 consecutive rows of appropriate effort data.	I4	13-16

Data Card 4:

CONTRL	Code for D-A VCOST file ('21 ')	A4	1- 4
FISHCD	Code for time when fishing activity occurs (See Table 2.2, Appendix)	I2	10-11
IOPTGR	Optional row in D-A VCOSTS file for cost of grocery/person (This field may be left blank)	I4	13-16
CREW	Number of crew, not including captain	F2.0	18-19
ICEORW	Optional row for ice cost in D-A VCOSTS file. (May be left blank, default is value in row 1 of D-A VCOSTS file.)	I4	21-24

END* (col. 1-4, last card).

Limitations: Only one data card may be used. (For discussion see section 1.14 on pages 17-18).

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* *
* 15. Agenda: GROC (col. 1-4, 1st card) *
* *
****

Variable Name	Description	Format	Col.
CONTRL	Code for D-A VCOSTS file ('21 ')	A4	1- 4
CREW	Number of crew members not including captain	I2	6- 7
IOPTGR	Optional row in D-A VCOSTS file for cost of grocery/person (This field may be left blank)	I4	13-16
ICEORW	Optional row for ice cost in D-A VCOSTS file. (May be left blank, default is row 1 of D-A VCOSTS file.)	I4	18-21

END* (col. 1-4, last card).

Limitations: Must be used with and precedes COMB agenda and/or PAYP agenda. 1 data card required. (For discussion see section 1.15 on page 19).

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* *
* 16. Agenda: COMB (col. 1-4, 1st card) *
* *
****

Variable Name	Description	Format	Col.
Data Card 1 :			
CONTRL	Code for D-A CATCHF file ('10 ')	A4	1- 4
FISHID	Enter first row of the 12 consecutive rows of appropriate catch data	I4	13-16
CPCT(1)	% of catch for this species for Jan. (Ex. enter 100% as 1.00)	F4.2	18-21
CPCT(2)	% of catch for this species for Feb.	F4.2	22-25
CPCT(3)	% of catch for this species for Mar.	F4.2	26-29
CPCT(4)	% of catch for this species for April	F4.2	30-33
CPCT(5)	% of catch for this species for May	F4.2	34-37
CPCT(6)	% of catch for this species for June	F4.2	38-41
CPCT(7)	% of catch for this species for July	F4.2	42-45
CPCT(8)	% of catch for this species for Aug.	F4.2	46-49
CPCT(9)	% of catch for this species for Sept.	F4.2	50-53
CPCT(10)	% of catch for this species for Oct.	F4.2	54-57
CPCT(11)	% of catch for this species for Nov.	F4.2	58-61

CPCT(12)	% of catch for this species for Dec.	F4.2	62-65
PRCICE	Optional price of ice default in row 1 of D-A VCOSTS file.	F5.2	67-71

Data Card 2:

CONTRL	Code for D-A CPRICE file ('11 ')	A4	1- 4
IPRCRW	Enter first row of the 12 consecutive rows of appropriate price data.	I4	13-16
PRPCT(1)	% adjustment for catch price for this species for Jan. (ex. enter 100% as 1.00)	F4.2	18-21
PRPCT(2)	% adjustment for catch price for this species for Feb.	F4.2	22-25
PRPCT(3)	% adjustment for catch price for this species for Mar.	F4.2	26-29
PRPCT(4)	% adjustment for catch price for this species for April	F4.2	30-33
PRPCT(5)	% adjustment for catch price for this species for May	F4.2	34-37
PRPCT(6)	% adjustment for catch price for this species for June	F4.2	38-41
PRPCT(7)	% adjustment for catch price for this species for July	F4.2	42-45
PRPCT(8)	% adjustment for catch price for this species for Aug.	F4.2	46-49
PRPCT(9)	% adjustment for catch price for this species for Sept.	F4.2	50-53
PRPCT(10)	% adjustment for catch price for this species for Oct.	F4.2	54-57

PRPCT(11)	% adjustment for catch price for this species for Nov.	F4.2	58-61
PRPCT(12)	% adjustment for catch price for this species for Dec.	F4.2	62-65

Data Card 3:

CONTRL	Code for D-A EFFORT file ('12 ')	A4	1- 4
FISHCD	Code for time fishing activity occurs (See Table 2.2, Appendix)	I2	10-11
IEFFRW	Enter first row of the 12 consecutive rows of appropriate effort data	I4	13-16
PCT (1)	% of effort in this species for Jan. (Example: enter 20% as .20)	F4.2	18-21
PCT (2)	% of effort in this species for Feb.	F4.2	22-25
PCT(3)	% of effort in this species for March	F4.2	26-29
PCT (4)	% of effort in this species for April	F4.2	30-33
PCT (5)	% of effort in this species for May	F4.2	34-37
PCT (6)	% of effort in this species for June	F4.2	38-41
PCT (7)	% of effort in this species for July	F4.2	42-45
PCT (8)	% of effort in this species for Aug.	F4.2	46-49
PCT (9)	% of effort in this species for Sept.	F4.2	50-53
PCT (10)	% of effort in this species for Oct.	F4.2	54-57
PCT (11)	% of effort in this species for Nov.	F4.2	58-61

PCT (12)	% of effort in this species for Dec.	F4.2	62-65

END* (col. 1-4, last card).

Limitations: Should be used instead of FISH agenda. This agenda must be used with GROC agenda and GROC agenda must proceed COMB agenda. This agenda may be used in combination with PAYP agenda and PAYP agenda must proceed COMB agenda. As many sets of four cards may be used as species desired. At least one set of data card must be used. Fields for monthly percentages may be left blank. This will result in zero effort for that month. (For discussion see Section 1.16, pages 19-21).

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* *
* 17. Agenda: PAYP (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
Data Card 1:			
CONTRL	Code for D-A CATCHF file ('10 ')	A4	1- 4
FISHID	Enter first row of the 12 consecutive rows in the D-A CATCHF file for appropriate number of tickets sold data.	I4	13-16
CPCT(1)	% of passengers or trips for this setup for Jan. (ex. 100% should be entered as 1.00%)	F4.2	18-21
CPCT(2)	% of passengers or trips for this setup for Feb.	F4.2	22-25
CPCT(3)	% of passengers or trips for this setup for Mar.	F4.2	26-29
CPCT(4)	% of passengers or trips for this setup for April	F4.2	30-33
CPCT(5)	% of passengers or trips for this setup for May	F4.2	34-37
CPCT(6)	% of passengers or trips for this setup for June	F4.2	38-41

CPCT(7)	% of passengers or trips for this setup for July	F4.2	42-45
CPCT(8)	% of passengers or trips for this setup for Aug.	F4.2	46-49
CPCT(9)	% of passengers or trips for this setup for Sept.	F4.2	50-53
CPCT(10)	% of passengers or trips for this setup for Oct.	F4.2	54-57
CPCT(11)	% of passengers or trips for this setup for Nov.	F4.2	58-61
CPCT(12)	% of passengers or trips for this setup for Dec.	F4.2	62-65

Data Card 2:

CONTRL	Code for D-A PAYPAS file ('18 ')	A4	1- 4
IPRCRW	Enter first row of the 12 consecutive rows for appropriate price per ticket.	I4	13-16
PRPCT(1)	% adjustment for fares for Jan.	F9.2	18-21
PRPCT(2)	% adjustment for fares for Feb.	F9.2	22-25
PRPCT(3)	% adjustment for fares for Mar.	F9.2	26-29
PRPCT(4)	% adjustment for fares for April	F9.2	30-33
PRPCT(5)	% adjustment for fares for May	F9.2	34-37
PRPCT(6)	% adjustment for fares for June	F9.2	38-41
PRPCT(7)	% adjustment for fares for July	F9.2	42-45
PRPCT(8)	% adjustment for fares for Aug.	F9.2	46-49
PRPCT(9)	% adjustment for fares for Sept.	F9.2	50-53
PRPCT(10)	% adjustment for fares for Oct.	F9.2	54-57

PRPCT(11)	% adjustment for fares for Nov.	F9.2	58-61
PRPCT(12)	% adjustment for fares for Dec.	F9.2	62-65

Data Card 3:

CONTRL	Code for D-A EFFORT file ('12 ')	A4	1- 4
IEFFRW	Enter first row of the 12 consecutive rows for appropriate days out.	I4	13-16
PCT(1)	% of effort for that paying passenger fleet in January (Example: Enter 55% as .55)	F4.2	18-21
PCT(2)	% of effort for that paying passenger fleet in February	F4.2	22-25
PCT(3)	% of effort for that paying passenger fleet in March	F4.2	26-29
PCT(4)	% of effort for that paying passenger fleet in April	F4.2	30-33
PCT(5)	% of effort for that paying passenger fleet in May	F4.2	34-37
PCT(6)	% of effort for that paying passenger fleet in June	F4.2	38-41
PCT(7)	% of effort for that paying passenger fleet in July	F4.2	42-45
PCT(8)	% of effort for that paying passenger fleet in August	F4.2	46-49
PCT(9)	% of effort for that paying passenger fleet in September	F4.2	50-53
PCT(10)	% of effort for that paying passenger fleet in October	F4.2	54-57

PCT(11)	% of effort for that paying passenger fleet in November	F4.2	58-61
PCT(12)	% of effort for that paying passenger fleet in December	F4.2	62-65
CRWPAY	Salary per crew member per day	F7.2	66-72
CPTPAY	Salary for the captain per day	F7.2	74-80

END* (col. 1-4, last card).

Limitations: As many data cards as desired may be included. GROC agenda must also be used if groceries are desired. GROC should precede this agenda . This agenda may be used in combination with the COMB agenda and PAYP must proceed the COMB agenda. (For discussion see Section 1.17 on pages 21-22).

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* 18. Agenda: HULL (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
CONTRL	File code for stored budget management ('17 ')	A4	1- 4
IROW	Row number in D-A HULLSF file where desired hull is located	I4	13-16
REPCD	Repair code (See Table 2.3 in Appendix)	I1	18
REPPCT	Repair percentage, 1.00 should be entered for normal repairs, >1 for extra repairs, <1 for less repairs	F4.2	20-23
REPCAT	Code for summarizing repairs, defaults to 1, "Hull" (See Table 2.8 in Appendix)	I2	25-26

HAULCD	Haul-out code to determine price to be used for haulout (See Table 2.10 in Appendix)	I1	28
PCROW	Row in D-A PCOSTS file to be used in timing haul-outs (This row not checked when deletions are made in D-A file.)	I4	30-33
IDEPMD	Optional depreciation method. Default is straight line. (See Table 2.1 in Appendix)	I1	35
DBLPCT	Optional accelerated depreciation percentage code. Default set at 2 for double declining balance.	I1	37
LOANCD	Loan Code, '0' cash payment in full, 1 for loan financed (See Table 2.4 in Appendix)	I1	39
PCDOWN	Optional downpayment percentage. Default to 0% down. (Example: 33% entered as 33)	F3.0	41-43
INTRST	Optional interest rate to override appropriate row in D-A RATESF file. (Example: 15% entered as 15) (See Table 2.11 in Appendix)	F3.0	45-47
LTERM	Loan term not to exceed life defaults to life of item.	I2	49-50
FP1TY	Optional loan payment method. Default is equal payments. (See Table 2.5 in Appendix)	I1	52
FP2TY	Optional loan payment schedule. Default is monthly. (See Table 2.6 in Appendix)	I1	54
FITY	Optional interest computation code. Default is monthly. (See Table 2.7 in Appendix)	I1	56

END* (col. 1-4, last card).

Limitations: Only one data may be used (For discussion see Section 2.1, pages 24-27).

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*
* 19. Agenda: ENGN (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
CONTRL	Stored bdgt data control code ('14 ')	A4	1- 4
NUMBER	Quantity of that engine	I8	5-12
IROW	Row number in D-A ENGINE file	I4	13-16
REPCD	Repair code (See Table 2.3 in Appendix)	I1	18
REPPCT	% adjustment for repairs, 1.00 should be entered for normal repairs.	F4.2	20-23
REPCAT	Code for summarizing repair. Defaults to 2 "Engines" (See Table 2.8 in Appendix)	I2	25-26
OILCD	Code for calculating oil changes: 0 for % of fuel, 1 for hours running (See Table 2.12 in Appendix)	I1	28
OFUPRC	Optional fuel price to override default value in row 2 of D-A VCOSTS file. file	F5.2	30-34
IOPTFR	Optional row number to be used for the price of fuel in D-A VCOSTS file.	I4	36-39
IDEPMD	Optional depreciation method. Default is straight line. (See Table 2.1 in Appendix)	I1	41

DBLPCT	Optional accelerated depreciation percentage code. Default set at 2 for double declining balance.	I1	43
LOANCD	Loan Code. 1 for loan financed, 0 for cash payment in full (See Table 2.4 in Appendix)	I1	45
PCDOWN	Optional downpayment percentage. Default to 0% down. (Example: 33% entered as 33)	F3.0	47-49
INTRST	Optional value to override appropriate row in D-A RATESF file. (Example: 15% entered as 15) (See Table 2.11 in Appendix)	F3.0	51-53
LTERM	Loan term if different from life of item	I2	55-56
FP1TY	Optional loan payment method. Default in equal payments. (See Table 2.5 in Appendix)	I1	58
FP2TY	Optional loan payment schedule.. Default in monthly. (See Table 2.6 in Appendix)	I1	60
FITY	Optional interest computations code. Default in monthly. (See Table 2.7 in Appendix)	I1	62

END* (col. 1-4, last card).

Limitations: 1st data card is considered to be main engine(s). Each subsequent data card is considered to be an auxiliary engine. For fuel and oil to be calculated by program, an engine data card must be included. Total inventory items may not exceed 100 (For discussion, see Section 2.2, pages 27-29).

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*
* 20. Agenda: EQMT (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
CONTRL	Code for keeping stored budgets updated ('15 bb')	A4	1- 4
NUMBER	Quantity desired of piece of equipment selected, defaults to 1	I8	5-12
IROW	Row number of item in D-A EQPMNT file.	I4	13-16
REPCD	Repair code. (See Table 2.3 in Appendix)	I1	18
REPPCT	% adjustment for repairs 1.00 should be entered for normal repairs.	F4.2	20-23
REPCAT	Code for summarizing repair. Defaults to 4 "Equipment" (See Table 2.8 in Appendix)	I2	25-26
RPLPCT	% adjustment for replacement 1.00 indicates operating replacements should be made in same quantity as initial investment	F4.2	28-31
RPLCAT	Replacement category defaults to 2 "Equipment" (See Table 2.9 in Appendix)	I2	33-34
IDEPMD	Optional depreciation method. Default is straight line. (See Table 2.1 in Appendix)	I1	36
DBLPCT	Optional accelerated depreciation percentage code. Default set at 2 for double declining balance.	I1	38
LOANCD	Loan code, 1 cause a loan to be taken on this item (See Table 2.4 in Appendix)	I1	40

PCDOWN	Optional downpayment percentage. Default to 0% down. (Example: 33% entered as 33)	F3.0	42-44
INTRST	Optional value to override appropriate row in D-A RATESF file. (Example: 15% entered as 15). (See Table 2.11 in Appendix)	F3.0	46-48
LTERM	Loan term if different from life	I2	50-51
FP1TY	Optional loan payment method. Default in equal payments. (See Table 2.5 in Appendix)	I1	53
FP2TY	Optional loan payment schedule. Default in monthly payments. (See Table 2.6 in Appendix)	I1	55
FITY	Optional interest computation code. Default in monthly. (See Table 2.7 in Appendix)	I1	57

END* (col. 1-4, last card).

Limitations: As many data cards may be entered as types of equipment desired. Total inventory items may not exceed 100. (See Section 2.3, pages 29-30 for discussion)

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*                                         *
*  21.  Agenda:  GEAR (col. 1-4, 1st card) *
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same as eqmt. except
1) col. 1-4 each set card should contain '16 bb'
2) REPCAT defaults to 3, "gear"
3) RPLCAT defaults to 1, "gear"

END* (col. 1-4, last card).

Limitations: As many data cards may be included as type of gear desired. Total inventory items may not exceed 100. (For discussion see Section 2.3, pages 29-30).

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* *
22. Agenda: OINV (col. 1-4, 1st card)
* *
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Variable Name	Description	Format	Col.
Data Card 1:			
NUMBER	Quantity of optional item desired	I8	5-12
NAME (KEEP,I) I=1,15	Unique description of optional investment item	15A4	14-73
Data Card 2:			
PRICE	Cost per unit for optional data item	F10.2	5-14
CAPCD	Capital code, 1 if item is to be depreciated	I1	16
REPCST	Dollar value for repair for the item per hour of use	F5.2	18-22
REPCD	Repair code. (See Table 2.3 in Appendix)	I1	24
REPPCT	% value used to adjust repairs. Enter 1.00 for normal use	F4.2	26-29
REPCAT	Code for summarized repair cost. No default here. (See Table 2.8 in Appendix)	I2	34-35
RPLCAT	Code for summarized replacement cost. No default here. (See Table 2.9 in Appendix)	F4.2	37-40
LIFE	Expected useful life for depreciation and cap. replacement	I2	42-43
SALVAG	% of original price to be salvaged at end of life	F4.2	45-48
IDEPMD	Optional depreciation method. Default is straight line. (See Table 2.1 in Appendix)	I1	50

DBLPCT	Optional accelerated depreciation percentage code. Default set at 2 for double declining balance.	I1	52
LOANCD	Loan code, to indicate loan enter 1 (See Table 2.4 pp. A2)	I1	54
PCDOWN	Optional downpayment percentage. Default to 0% down. (Example: 33% entered as 33)	F3.0	56-58
INTRST	Optional value to override appropriate row in D-A RATESF file. (Example: 15% entered as 15) (See Table 2.11 in Appendix)	F3.0	60-62
LTERM	Loan term if different from life	I2	64-65
FP1TY	Optional loan payment method. Default in equal payments. (See Table 2.5 in Appendix)	I1	67
FP2TY	Optional loan payment schedule. Default in monthly payments. (See Table 2.6 in Appendix)	I1	69
FITY	Optional interest computation code. Default in monthly. (See Table 2.7 in Appendix)	I1	71

END* (col. 1-4, last card).

Limitations: Each item entered requires two data cards. As many optional items may be entered as the user desires. Total items in inventory may not excede 100. (For discussion see section 2.4, pages 31-32).

****
* 23. Agenda: OVAR (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
Data Card 1:			
FTITLE (I), I=1,9	Title description for optional variable cost item	9A4	5-40
VARCST (1)	Optional variable cost for this item incurred in Jan.	F10.2	41-50
VARCST (2)	Optional variable cost for this item incurred in Feb.	F10.2	52-61
VARCST (3)	Optional variable cost for this item incurred in March	F10.2	63-72
Data Card 2:			
VARCST (4)	Optional variable cost for this item incurred in April	F10.2	5-14
VARCST (5)	Optional variable cost for this item incurred in May	F10.2	16-25
VARCST (6)	Optional variable cost for this item incurred in June	F10.2	27-36
VARCST (7)	Optional variable cost for this item incurred in July	F10.2	38-47
VARCST (8)	Optional variable cost for this item incurred in Aug.	F10.2	49-58
VARCST (9)	Optional variable cost for this item incurred in Sept.	F10.2	60-69
VARCST (10)	Optional variable cost for this item incurred in Oct.	F10.2	71-80
Data Card 3:			
VARCST (11)	Optional variable cost for this item incurred in Nov.	F10.2	5-14
VARCST (12)	Optional variable cost for this item incurred in Dec.	F10.2	16-25
CRWVAR	Crew's % share of this expense	F4.2	27-30

CAPVAR	Captain's % share of this expense	F4.2	32-35

END* (col. 1-4, last card).

Limitations: All three cards must be used for each variable cost to be included. Blank cards must be used in cases where all the fields on a card have no data to be entered. As many variable cost may be optionally entered as desired. (For discussion see Section 3.1 . pages 33-34).

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* 24. Agenda: PAYR (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
CONTRL	Code for stored budget file updating ('20 bb')	A4	1- 4
PAYCOD	Payroll deduction code. (See Table 2.16 in Appendix) p. a)	I1	5
IOPROW	Optional row from D-A RATESF file to be used for that instead of default row (27 for soc. sec.; 28 for unemp.; 23 for work. comp.)	I4	13-16
RATEIO	Optional % rate for that payroll calculation, used instead of default value or optional value stored in preceding field	F4.2	18-21
TSTINC	Optional maximum income for payroll deductions to override default row in D-A VCOSTS file. (5 for soc. sec.; 5 for unemp.)	F10.0	23-32

END* (col. 1-4, last card).

Limitations: One data card must be included for each type of payroll deduction desired. Three types available, so the maximum number of cards is 3. (For discussion, see Section 3.2, page 34).

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* *
* 25. Agenda: FIXC (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
IQTY	Quantity of a fixed cost item	I8	5-12
IROW	Row number in D-A VCOSTS file item is located	I4	13-16

END* (col. 1-4, last card).

Limitations: As many data cards may be included as there are fixed costs. Data cards are not required for this agenda. The "FIXC" and "END*" cards must appear in the control flow in order to indicate to the program that the variable cost section of the budget is complete and to signal the beginning of the fixed cost portion. (For discussion see Section 4.1, page 35).

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* *
* 26. Agenda: OFIX (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
FTITLE(I), I=1, 9	Title description of optional fixed cost item	9A4	5-40
IQTY	Quantity of this item to be used	I8	42-49
CSTPR	Cost per unit of this item	F10.2	51-60

END* (col. 1-4, last card).

Limitations: As many cards can be included as items to be optionally added to this run. (For discussion see Section 4.2, pages 35-36).

****
* 27. Agenda: OMFX (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
Data Card 1:			
FTITLE (I), I=1,9	Title description of optional fixed cost item	9A4	5-40
CSTMON(1)	Fixed cost for this item in Jan.	F10.2	41-50
CSTMON(2)	Fixed cost for this item in Feb.	F10.2	51-60
CSTMON(3)	Fixed cost for this item in Mar.	F10.2	61-70
CSTMON(4)	Fixed cost for this item in April.	F10.2	71-80
Data Card 2:			
CSTMON(5)	Fixed cost for this item in May.	F10.2	1-10
CSTMON(6)	Fixed cost for this item in June.	F10.2	11-20
CSTMON(7)	Fixed cost for this item in July.	F10.2	21-30
CSTMON(8)	Fixed cost for this item in Aug.	F10.2	31-40
CSTMON(9)	Fixed cost for this item in Sept.	F10.2	41-50
CSTMON(10)	Fixed cost for this item in Oct.	F10.2	51-60
CSTMON(11)	Fixed cost for this item in Nov.	F10.2	61-70
CSTMON(12)	Fixed cost for this item in Dec.	F10.2	71-80

END* (col. 1-4, last card).

Limitations: As many sets of cards can be included as items to be optionally added to this run. (For discussion see Section 4.3, page 36).

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* 28. Agenda: INSR (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
CONTRL	Code for data management of stored budgets ('20 ')	A4	1- 4
INCODE	Insurance code (See Table 2.13 in Appendix)	F5.4	5
RATEIO	Optional value for insurance rate	F5.1	7-11
IOPROW	Optional row number in D-A file for insurance rate. If neither RATEIO or IOPROW are utilized then the rate used defaults to appropriate value stored in D-A RATESF file.	I4	13-16

END* (col. 1-4, last card).

Limitations: As many four insurance calculations may be submitted. Common usage would be one data card (For discussion see Section 4.4, pages 36-37).

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* 29. Agenda: TAXS (col. 1-4, 1st card) *
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Variable Name	Description	Format	Col.
IPPTAX	Code for selecting property tax, 1(One) if tax is to be calculated	I1	5
IOWNSS	Code for owner operator social security. Enter 1 (One) if tax it to be calculated	I1	7
TAXCOD	Code for selecting federal income tax, 0 or blank - no tax, 1 - corporate taxes, 2 - joint filing status used	I1	9

INVCOD	Code for selecting investment tax credit, 1 (One) if credit is to be used	I1	11
ISTCOD	Code for selecting state income tax, 1 (One) if state income tax is to be calculated	I1	13
OPPCTV	Optional percentage rate used for property valuation tax purposes, defaults to rate in D-A RATESF file in row 29	F5.4	15-19
OPMILR	Optional mil rate to be used for property tax calculation defaults to data in D-A RATESF file in row 30.	F5.4	21-25
OOSSMI	Optional value to be used for owner-operator maximum income level for social security deductions defaults to data in D-A VCOSTS file in row 6.	F10.2	27-36
OOSSRT	Optional value for the rate used in owner-operator social security calculations defaults to data in D-A RATESF file in row 31.	F5.4	38-42
OSTTAX	Optional rate to be used in calculating state income tax as a percentage of federal income tax defaults to data in a D-A RATESF file in row 36.	F5.4	44-48

END* (col. 1-4, last card).

Limitations: Optional fields do not have to have data entered. Default values from the D-A RATESF file are used. Only one data card used. Budget is totaled here, so if no taxes are desired the BTOT agenda has to be used to total budget. This agenda must follow all agendas except BRKE. (For discussion see section 4.5, pages 32-39).

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* 30. Agenda: BTOT (col. 1-4, 1st card) *
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No Data

END* (col. 1-4, last card).

Limitations: No data can be entered here. This agenda must be used if the TAXS agenda is not used. It's function is to total the budget. This agenda must follow all agendas, except at BRKE. (For discussion see Section 4.6, page 39).

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* 31. Agenda: OPPC (col. 1-4, 1st card) *
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Variable Name	Description	Fortran	Col.
CONTRL	Left blank here optional	A4	1-4
EQURAT	Optional Percentage rate for calculation of return to original equity. Defaults to row 24 in D-A RATES file.	F4.3	6-9
COST	Optional opportunity cost for management. Defaults to row 7 in D-A VCOSTS file.	F10.0	11-20

END* (col. 1-4, last card).

Limitations: No data can be entered here. Calculates Opportunity cost of equity and management. (For discussion see section 4.7, pages 39-40).

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*  32.  Agenda:  BRKE (col. 1-4, 1st card) *
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No Data

END* (col. 1-4, last card).

Limitations: No data can be entered here. Calculates break-even values, printed at bottom of Detailed Annual Budget. If Detailed Annual Budget is not printed, the break-even values will appear on a page without a heading. This agenda must be last agenda in control-stream. (For discussion see Section 4.8, pages 40-41).